ADPRO® FastTrace™ 2 Series

Hardware Installation Manual

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ADPRO by xtralis

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The following typographic conventions are used in this document.

Convention	Description
Bold	Used to denote: emphasis. Used for names of menus, menu options, toolbar buttons.
Italics	Used to denote: references to other parts of this document or other documents. Used for the result of an action.

The following icons are used in this document.

Icon	Description
	Note. This icon indicates information of special interest that will help the reader make full use of the product, optimise performance, etc. Failure to read the note will not result in physical harm to the reader, or damage to equipment or data.
	Caution! This icon indicates danger to equipment. The danger can be loss of data, physical damage to the equipment, or permanent corruption of configuration details.
	Warning! This icon indicates danger of physical harm to the reader. Not following instructions may lead to death or permanent injury.
	Warning! This icon indicates danger of electric shock. This may lead to death or permanent injury.
	Warning! This icon indicates that there is a danger of inhaling dangerous substances. This may lead to death or permanent injury.

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Contact Us

UK and Europe +44 1442 242 330 **D-A-CH** +49 431 23284 1 **The Americas** +1 781 740 2223
Middle East +962 6 588 5622 **Asia** +86 21 5240 0077 **Australia and New Zealand** +61 3 9936 7000
www.xtralis.com

Environmental Information

The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at the product end of life. This applies to the device but also to any accessories marked with this symbol. Do not dispose of these products as unsorted municipal waste.

If you need more information on the collection, reuse, and recycling systems please contact your local waste administration. You can also contact us for more information on the environmental specifications of our products.

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1 Technical Specifications

The FastTrace 2 unit is the current video security system within the ADPRO® FastTrace™ series. It has been developed as a high performance video security unit that can either be managed by CMS software (e.g. M3000) or by the ADPRO XOa client.

Operating system	PC platform – Linux OS
Network protocols	TCP, UDP, FTP, Telnet, HTTP, SMTP, RTSP, RTP
Bandwidth	Remotely adjustable: compression, fps, and quality. You can specify a bandwidth limit.
Bandwidth consumption	6 fps CIF/SIF: 70 kbps 12 fps 4CIF/SIF: 400 kbps in optimal quality
Software updates	Local and remote
Maximum number of cameras	FastTrace 2/2X: 16 (total of analogue and IP cameras) FastTrace 2E: 32 (total of analogue and IP cameras)
Analogue cameras (*)	FastTrace 2/2X: 4, 8, 12, or 16 analogue A/V inputs FastTrace 2E: 4, 8, 12, 16, or 20 analogue A/V inputs
	Video: • PAL or NTSC • BNC connectors (1.0 Vp-p; 75 ohm) • Max. cable length: 350 m (RG59); 610 m (RG11)
	Audio: • 1 input per analogue camera • Screw connectors • Input level: 2.0 Vp-p; 1000 ohm
Analogue cameras Video resolution PAL	QCIF (176 x 144) CIF (352 x 288) 2CIF (704 x 288) DCIF (528 x 384) (not available with DS42xx A/V cards) 4CIF (704 x 576)
Analogue cameras Video resolution NTSC	QSIF (176 x 120) SIF (352 x 240) 2SIF (704 x 240) DSIF (528 x 320) (not available with DS42xx A/V cards) 4SIF (704 x 480)
Analogue cameras images/second PAL	CIF, 2CIF, DCIF: 25 fps / camera 4CIF: 15 fps / camera (25 fps with DS42xx A/V cards)
Analogue cameras images/second NTSC	QSIF, SIF, 2SIF, DSIF: 30 fps / camera 4SIF: 15 fps / camera (25 fps with DS42xx A/V cards)
IP cameras (**)	Up to 20 IP cameras on a dedicated IP network. Optional network interface required: • 1 HIPI card per 8 IP cameras • FastTrace 2E: 1 Ethernet card for up to 32 IP cameras (with XOa software, Intel DH61BE or MiTAC PH10LU motherboard and 4 GB RAM or more) With MiTAC PH10LU motherboard: no separate network card required. Only H.264 video streaming can be used. Audio input is supported.
Video resolution and images/second	Depends solely on the IP camera type. Maximal HD/MP resolution.

Video output	VGA connector; adjustable resolution (up to SXGA) With MiTAC PH10LU motherboard: DVI-I or DP (DisplayPort)
Video compression	H.264
Audio compression	The audio compression depends on the camera type.
Bandwidth	Remotely adjustable: compression, fps, and quality. You can specify a bandwidth limit.
Bandwidth consumption	6 fps CIF/SIF: 70 kbps 12 fps 4CIF/SIF: 400 kbps in optimal quality
Recording type	Continuous, on event (e.g. input, motion detection), alarm over IP (S3100), Presidium
Storage	Max. 4 x 4 TB SATA hard disks. RAID 1 support ***Note*** You can connect a portable DVD writer to export video sequences. Use the USB connector on the front, or the USB connectors on the back of the FastTrace 2.
Remote visualisation	Internet Explorer; Windows XP, Windows Vista, Windows 7, Windows Server 2003, Windows Server 2008
Management	• Internet Explorer (installs XOa client software) • VSKWin software • M3000 software • VideoCentral Platinum • HeiTel EMS software • third-party CMS software
Power supply	100–240 VAC, 50/60 Hz (+80 % efficiency) ***Note*** The video system must be connected to a 100-230 VAC/16 A mains outlet with proper earth, applying a separate, locally approved power cord.
Operating temperature	5–40 °C (see *Fan Speed Selection* on page 29)
Humidity	20–93 % RH (non-condensing)
Dimensions	445 x 132.5 x 300 mm (W x H x D) without flanges You can fix rubber feet on the bottom. The height is then increased by 2.5 mm.

(*) With an ENTRY system license you can only use 4 analogue cameras, because this is the maximum number of analogue cameras that is supported by the ENTRY system license. This is for instance the case with the ADPRO FastTrace 2 Lite.

(**) With an ENTRY system license you cannot use IP cameras, because this is not supported by this specific system license. This is for instance the case with the ADPRO FastTrace 2 Lite.

Note

You are not allowed to draw any other streams from the IP cameras than those destined for the FastTrace 2. If you do need to draw other streams from the IP camera for any reason, use the single stream mode (for more information, see the *XOa Client Software User Manual*).

If you have to use streams for other applications as well, then also use the single stream mode.

Multi-site FastTrace 2 configuration is possible:

- Integration of up to 10,000 FastTrace 2 video security systems
- Remote video and audio, live video, and consultation of recordings
- Compatible with FOXnet®Plus, FALCONnet, S3100, Presidium, VSKwin®, VCP, and M3000
- SDK for third-party integration

Note

Please use the reference numbers in this document (for example #17434080) for ordering parts with Xtralis, or for identifying the correct required part. If a part is indicated by a reference number ending in an asterisk (for example #1729121*), this indicates that several variants exist for the part (for example reference numbers #17291210 and #17291211). These variants are interchangeable. Any variant is suitable for the task described.

2 Specific FastTrace Configurations

2.1 FastTrace 2 Lite

The FastTrace 2 Lite has been designed, developed and manufactured as a complete FastTrace 2 video security system, but the Entry system license that is included, limits the number of supported cameras to a maximum of 4 analogue cameras.

Also note that the FastTrace 2 Lite can only operate with analogue cameras; it does not support IP cameras.

The FastTrace 2 Lite comes with an Entry system license. It is not possible to expand the video system with new licenses and/or extra extension boards.

a	FastTrace 2	FastTrace 2 Lite
Full system license	✓	×
TX (transmission) only license	✓	×
Entry level license	✓	✓

For more information on the system licenses, see *System License* on page 13.

For more information on FastTrace 2 Lite, see the commercial datasheet. You can download the datasheet from our website www.xtralissecurity.com (logon not required for commercial datasheets).

Note

The FastTrace 2 Lite has become obsolete. Xtralis no longer provides it.

2.2 FastTrace 2X

The FastTrace 2X has been developed as a more powerful video system with higher performance and more efficient operation.

The major difference is that the FastTrace 2X supports up to 16 analytic channels, while the FastTrace 2 is limited to a maximum of 4 analytic streams.

The FastTrace 2X comes with a full or TX-only system license.

	FastTrace 2	FastTrace 2X
Full system license	✓	✓
TX (transmission) only license	✓	✓
Entry level license	✓	×

For more information on the system licenses, see *System License* on page 13.

Note

The FastTrace 2X requires software version 2.6 or higher.

Wherever in this document the term FastTrace 2 is used, you can assume that the term refers to both the FastTrace 2 and the FastTrace 2X, unless specifically mentioned otherwise.

Note

The FastTrace 2X has become obsolete. Xtralis no longer provides it.

2.3 FastTrace 2E

The FastTrace 2E is the latest hardware in the ADPRO® FastTrace™ 2 series. It has been developed as a powerful video system with high performance and more efficient operation to replace the former FastTrace units. The FastTrace 2E has up to 20 analogue video inputs, up to 32 IP video inputs, and supports up to 32 analytic channels.

Although the XOa 3 software technically allows for 32 IP channels, these 32 channels are only available on FastTrace 2E models with an Intel DH61BE or MiTAC PH10LU motherboard, and 4 GB RAM or more. On other models, maximum 16 IP channels are available.

Furthermore, to use the 32 IP channels, the FastTrace 2E requires a new system license. Use Xchange to install the new license. For instructions, see *Field Alert #6 – Upgrading to Xoa 3*.

Remember to purchase and install additional IP licenses if required.

You can purchase the FastTrace 2E with a full or TX-only system license.

	FastTrace 2	FastTrace 2E
Full system license	✓	✓
TX (transmission) only license	✓	✓
Entry level license	✓	×

For more information on the system licenses, see *System License* on page 13.

Note

The FastTrace 2E requires software version 2.10 or higher.

Wherever in this document the term FastTrace 2 is used, you can assume that the term refers to both the FastTrace 2 and the FastTrace 2E, unless specifically mentioned otherwise.

2.4 System License

From version 2.00, all ADPRO video systems require a system license.

Note

Applications such as IntrusionTrace, LoiterTrace…, IP channels, and the video encoder cards require a separate license. They are not included in the system license.

There are 3 types of system licenses available:

- FULL: all features of the video system are available.
- ENTRY(*): all features are available, with these restrictions:
  - You can use only 4 analogue cameras (no IP camera support).
  - You can use only 1 hard disk.
  - You can only use 1 MIO card (and no EIO cards).
- TRANSMITTER (TX) only: all features are available, but continuous recording is not allowed and recording on event is fixed to 5 seconds pre-recording, 10 seconds event recording, and 0 seconds post-recording. Furthermore, event recording stops when the limit of 16,000 events has been reached.

(*) The ENTRY system license is not available for the FastTrace 2X or FastTrace 2E configuration.

A FastTrace 2 video system running without system license will behave as a video system with a **FULL license for 5 days**. However, the system informs the user of the license error via the event message 0013 – [SYST] – SYSTEM LICENSE ERROR, and via a popup window at each connection with the XOa client.

After that period of 5 days, the video system enters a **locked-down state**, and refuses all connections for live streams and recordings. All active configured recordings continue on the video system. During this locked-down state, the XOa client shows only the **About** window (so that you can retrieve the necessary information to order a new license) and the **Transfer** window (so that you can upload a license to the

FastTrace 2 video system). For more information on uploading licenses, see the *XOa Client Software User Manual*.

Note

The system license is locked on the FastTrace 2 motherboard and is therefore system specific: the license must include the correct MAC address.

When you upload the system license and your unit already has other licenses (e.g. an encoder license, a LoiterTrace license…), your video system merges all these licenses together in one license file. For backup and archiving, you only need to download one file.

3 Hard Disks

3.1 Required Hard Disk Capacity

As there are lots of configuration possibilities, Xtralis has a hard disk space calculator available. You can find this hard disk space calculator on the CD/DVD provided with your FastTrace 2 video system, or you can download it from our website www.xtralissecurity.com. Make sure you log on with sufficient download rights.

Note

The calculator is an estimating tool only. Figures are purely indicative. The real requirements of the hard disk capacity depend on scene content.

3.2 Adding/Replacing a Hard Disk

If you receive error messages from your hard disk in the **Status** screen of the XOa client, you may need to replace the faulty hard disk.

If the system is running out of disk space, you can add a new hard disk without removing any of the hard disks in use. You can install up to 4 hard disks.

Note

When using an Entry system license, you can use only 1 hard disk. For example, with the ADPRO FastTrace 2 Lite.

Note

It is possible to mount a hard disk coming from another unit into a new unit. If you do this, you can play back video that has been recorded by the other FastTrace 2 unit.

Take the following restrictions into account:

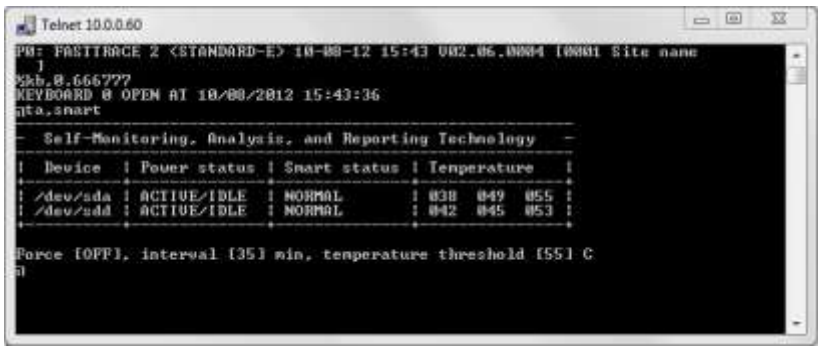
- Make sure that the new unit has the same configuration concerning the number of video channels as the unit from which the hard disk was taken.
- Xtralis recommends to immediately put the number of days recording to 0 (in the **Recording Behaviour** screen, **Maximum days recording**). This prevents overwriting of valuable data.
- Clear all recording conditions in the recording behaviour. This prevents overwriting of valuable data.
- Do not mix hard disks from different FastTrace 2 units into one, because this will result in unpredictable behaviour. Do not **add** the old disk to the new unit, but **replace** the disk(s) in the new unit by the old disk(s).

3.3 Retrieving Hard Disk Information

You can retrieve hard disk information and identify possibly hard disks using the Telnet **ta,smart** command, or using the XOa client software.

3.3.1 Using the ta,smart Command

SMART stands for Self-Monitoring Analysis and Reporting Technology. Execute the **ta,smart** command in a Telnet session to obtain the SMART information for all hard disks in the FastTrace 2 video system.


Telnet 10.0.0.60
P0: FASTTRACE 2 <STANDARD-E> 10-08-12 15:43 V02.06.0004 [0001 Site name
]
%kb,0,666777
KEYBOARD 0 OPEN AT 10/08/2012 15:43:36
=ta,smart
- Self-Monitoring, Analysis, and Reporting Technology -
Device	Power status	Smart status	Temperature
/dev/sda	ACTIVE/IDLE	NORMAL	038 049 055
/dev/sdd	ACTIVE/IDLE	NORMAL	042 045 053
Force [OFF], interval [35] min, temperature threshold [55] C
=

The screen displays the following information:

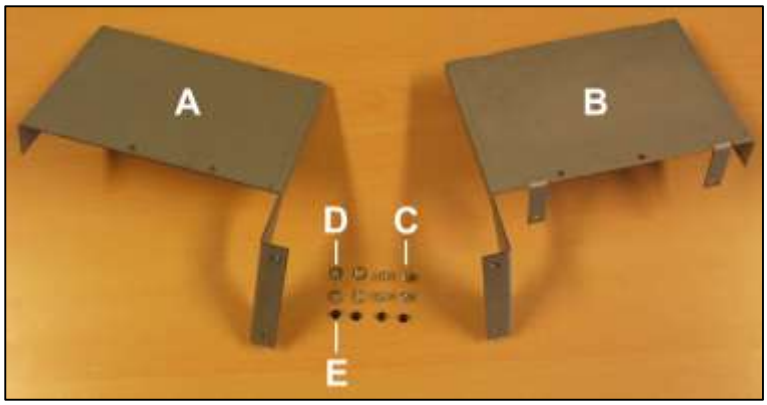
Device	Indicates the specific hard disk
Power status	The power status column displays one of the following statuses: • ERROR → there is a problem retrieving the power status of the drive • ACTIVE/IDLE → drive operates normally • STANDBY → drive is in low power mode (drive is in spin-down status) • SLEEPING → drive is in lowest power mode (drive is completely shut down)
Smart status	The smart status column displays one of the following statutes: • ERROR → drive is failing • ALERT → there is a problem retrieving SMART info from the drive, or the drive may be in the process of failing • NORMAL → no problems found with the drive
Temperature	The temperature column displays from left to right: • the minimum temperature of the disk • the current temperature of the disk • the maximum temperature of the disk
Force [ON/OFF]	ON = SMART is checked on disk in STANDBY or SLEEPING mode OFF = SMART is only checked on disks in ACTIVE/IDLE mode
Interval	Indicates the interval (in minutes) between SMART checks.
Temperature threshold	If the disk temperature is higher than this threshold, the system generates the alarm I102: 'SMART HDD ALERT TEMP'.

3.3.2 Using the XOa Client Software

If you have more than one hard disk installed in your server, you can check which hard disk is causing the alarm messages in the XOa client via **System > Maintenance > Harddisks**. The **Smart** column shows the operational status of the hard disks.

Harddisks
#|Disk |ID |Size |Type |Power |Smart |Temp |Parent
00|/dev/sda |WD-WMAYP6470669 |465 GiB |raid1 |ACTIVE/IDLE |NORMAL |41 |00
01|/dev/sdc |WD-WMAYP6606080 |465 GiB |raid1 |ACTIVE/IDLE |NORMAL |41 |00

3.4 Material List (for 1 Hard Disk)



	Part	Amount+ Reference Number
A	Support for disk 2	1 x #1729121*
B	Support for disk 3 and 4	1 x #1729122*
C	Disk screws	4 x #17434080 or #17434060
D	Dented washers M4	4 x #17720050
E	Mounting screws	4 x #17439080
	SATA cable	1 x #1652087*
	Tie-wraps	1 x #17730220

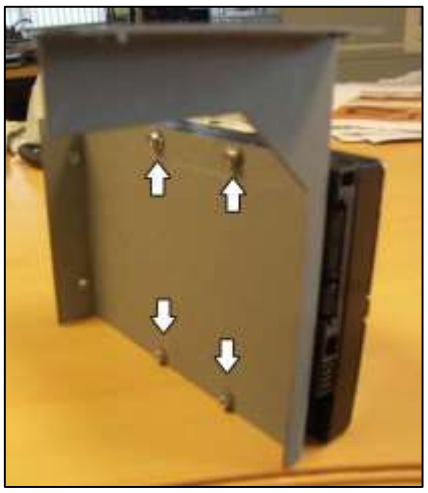
3.5 Adding Hard Disks with an Intel DH55TC Motherboard

To add one or more hard disks with an Intel DH55TC motherboard, proceed as follows:

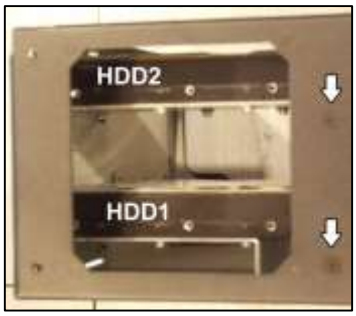
1. Switch off the power supply and remove the lid. Then remove the front plate.

You can now see the mounting holes for the disk bays:

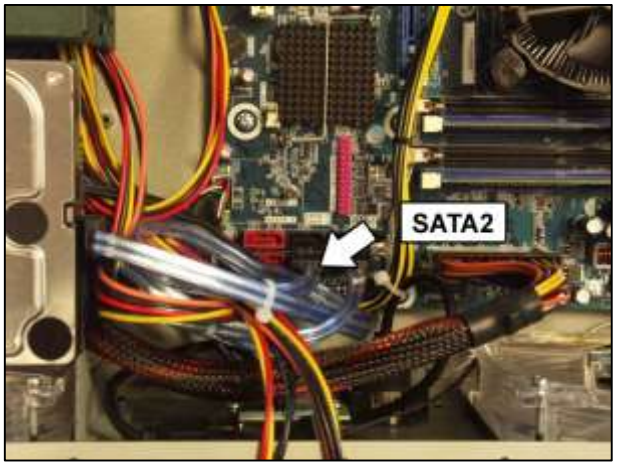
2. Fix the second disk to the support #1729121* with the screws #17434080 or #17434060 and dented washers M4 #17720050.



3. Fix the support to the casing with 4 screws (#17439080): 2 at the front, and 2 at the left side of the casing.

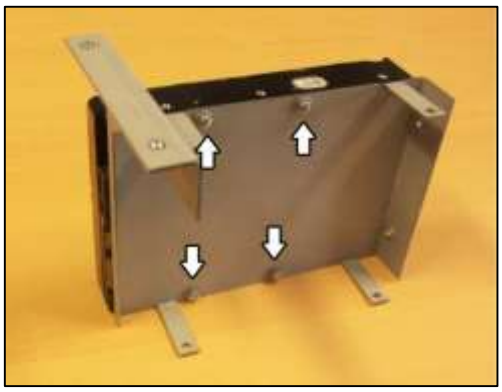
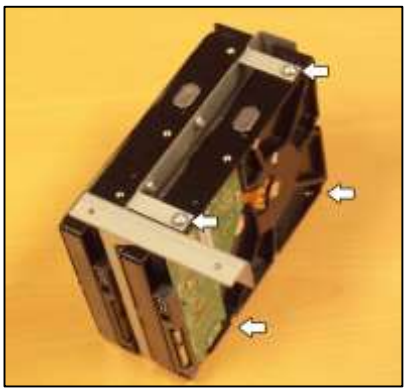


4. Connect the disk to the SATA2 connector on the motherboard with the SATA cable (#1652087*).



5. For the power supply to the disk, connect the remaining SATA power connector on the power cable of disk 1 (**not** the one on the tail end; that one is reserved for the D.O.M.) to the disk.
6. If you need to add more disks, continue with the next step.
   If you do not need to add more disks, skip to step 12.

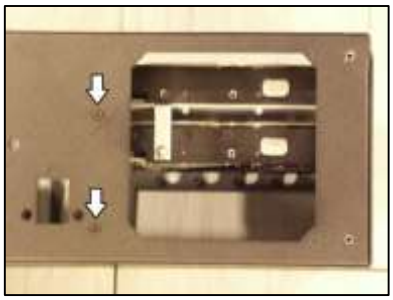
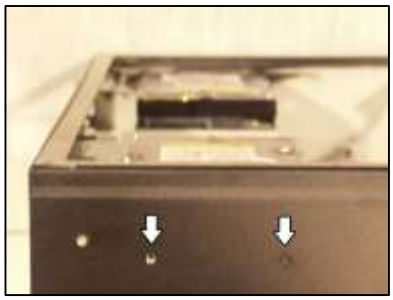
7. Fix the third disk on the top side of the support for disk 3 and 4. If necessary, fix the fourth disk on the bottom side of the same support.

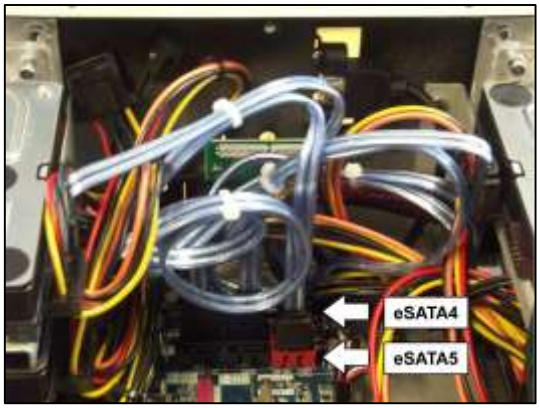
Note

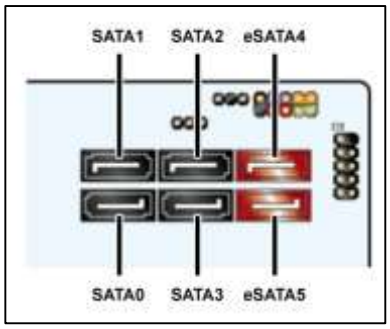
Make sure to install the disk on the **top side** of the support **first**.

8. Fix the support to the casing with 4 screws (#17439080): 2 at the front, and 2 at the right side of the casing.

9. Connect disk 3 to the eSATA4 connector on the motherboard with a SATA cable (#1652087*).
10. If necessary, connect disk 4 to the eSATA5 connector on the motherboard with a SATA cable (#1652087*).





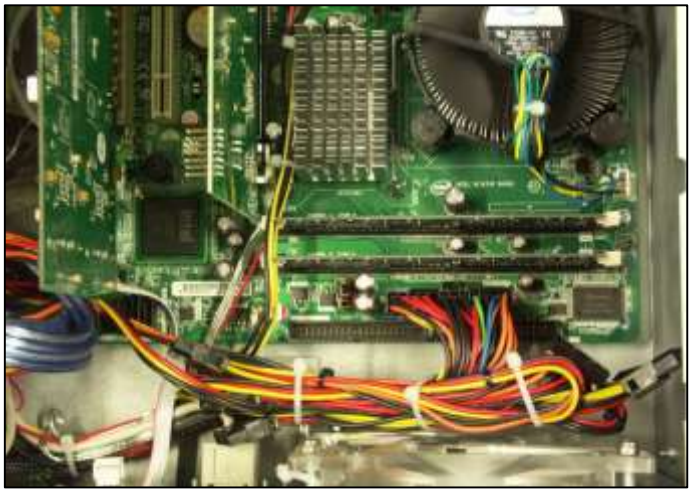
Caution!

Do not bend the SATA cables too sharply to prevent cable damage.

11. For the power supply to disks 3 and 4, take an unused SATA power cable and connect it as follows:
    - Use the connector that is closest to the power supply for disk 4.
    - Use the next connector for disk 3.

12. If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

13. If there are unused cables left, bundle them with tie-wraps.



14. Fix the front plate (#17011610) on the base with the screws (#17444080).
Put the cover in place and secure with 10 screws (#17439080).
15. Connect a monitor/screen and keyboard to the server. Switch on the power supply and wait for the boot window to appear.
16. Select **XOa Installer** and press Enter.
17. The next step depends on the type of hard disk that you are installing:
    - If the added hard disk is new, choose **Update current system > Manage recording disks** and select the new hard disk in the list. Press **Enter**. Then choose (using the tab key) **Format and use selected disks**. Choose **Main Menu** and choose **Reboot**.
    - If the added hard disk comes from another server unit, choose **Update current system > Mount all recording disks**. Press **Enter**. Then choose **Main Menu** and choose **Reboot**.

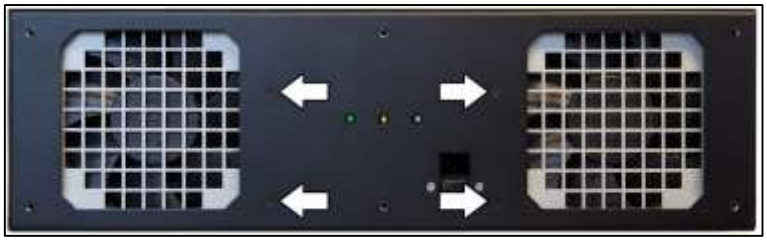
The video system now reboots. After rebooting, the new hard disk is ready for use.

3.6 Adding Hard Disks with an Intel DH61BE Motherboard

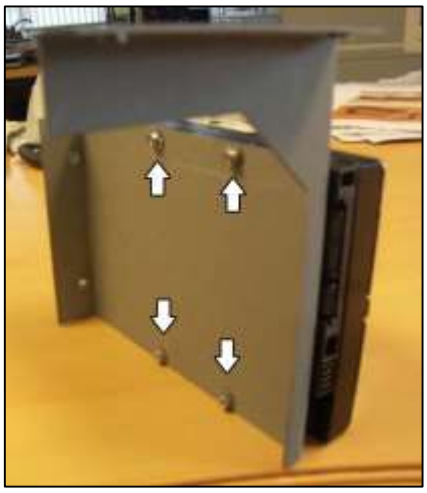
To add one or more hard disks with an Intel DH61BE motherboard, proceed as follows:

1. Switch off the power supply and remove the lid. Then remove the front plate.

You can now see the mounting holes for the disk bays:

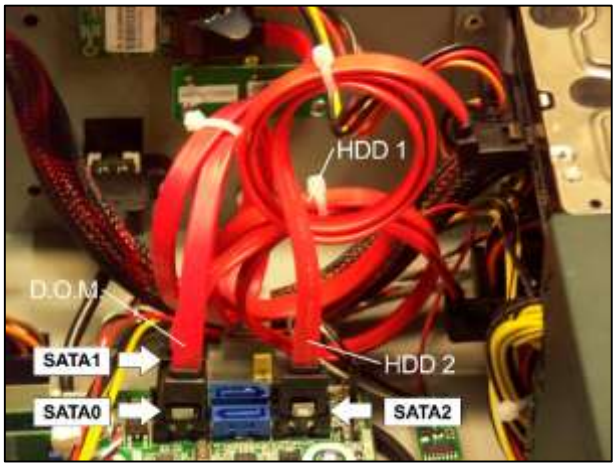


2. Fix the second disk to the support #1729121* with the screws #17434080 or #17434060 and dented washers M4 #17720050.



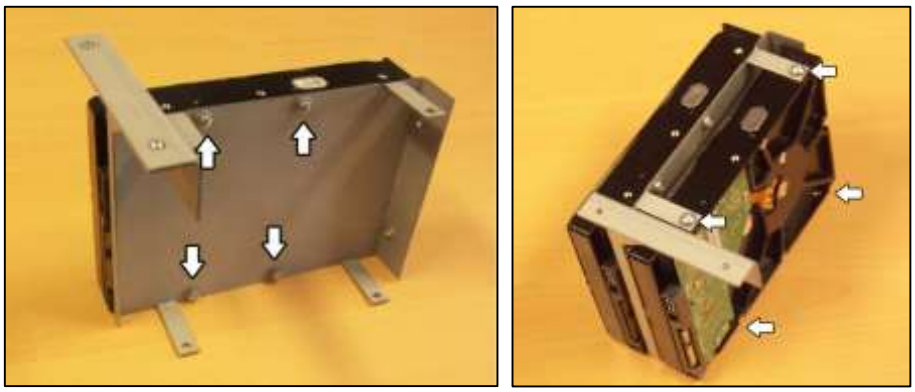
3. Fix the support to the casing with 4 screws (#17439080): 2 at the front, and 2 at the left side of the casing.

4. Connect the disk to the SATA2 connector on the motherboard with the SATA cable (#1652087*).



5. For the power supply to the disk, connect the remaining SATA power connector on the power cable of disk 1 (**not** the one on the tail end; that one is reserved for the D.O.M.) to the disk.
6. If you need to add more disks, continue with the next step.
   If you do not need to add more disks, continue with step 12.

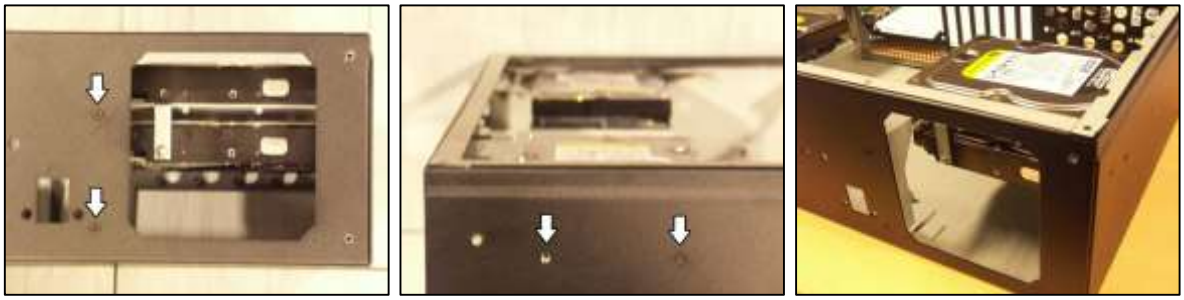
7. Fix the third disk on the top side of the support for disk 3 and 4. If necessary, fix the fourth disk on the bottom side of the same support.



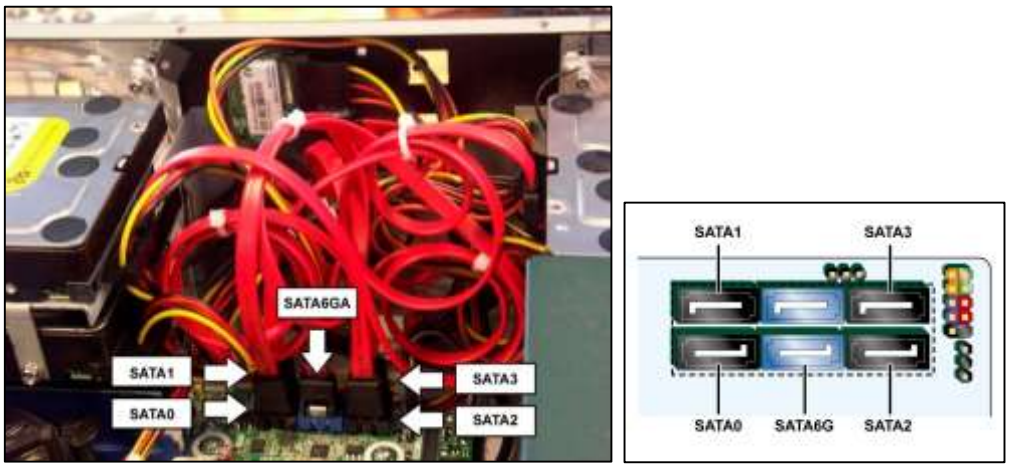
Note

Make sure to install the disk on the **top side** of the support **first**.

8. Fix the support to the casing with 4 screws (#17439080): 2 at the front, and 2 at the right side of the casing.



9. Connect disk 3 to the SATA3 connector on the motherboard with a SATA cable (#1652087*).
10. If necessary, connect disk 4 to the SATA6GA connector on the motherboard with a SATA cable (#1652087*).



Caution!

Do not bend the SATA cables too sharply to prevent cable damage.

11. For the power supply to the disk, take an unused SATA power cable and connect it as follows:
    - Use the connector that is closest to the power supply for disk 4.
    - Use the next connector for disk 3.

12. If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

13. If there are unused cables left, bundle them with tie-wraps.

14. Fix the front plate (#1701164x or #1701166x) on the base with the screws (#17444080). Put the cover in place and secure with 10 screws (#17439080).
15. Connect a monitor/screen and keyboard to the FastTrace 2 server. Switch on the power supply and wait for the boot window to appear.
16. Select **XOa Installer** and press Enter.
17. The next step depends on the type of hard disk that you are installing:
    - If the added hard disk is new, choose **Update current system > Manage recording disks** and select the new hard disk in the list. Press **Enter**. Then choose (using the tab key) **Format and use selected disks**. Choose **Main Menu** and choose **Reboot**.
    - If the added hard disk comes from another server unit, choose **Update current system > Mount all recording disks**. Press **Enter**. Then choose **Main Menu** and choose **Reboot**.

The video system now reboots. After rebooting, the new hard disk is ready for use.

3.7 Boot Problems after Adding a HDD with the DH61BE Motherboard

If you are experiencing boot problems after adding a HDD in a server with a DH61BE motherboard, check if the SATA cable connections between the HDDs and motherboard are correct. The table below shows the correct devices and SATA connectors:

Device	SATA Connector
D.O.M.	SATA0
HDD1	SATA1
HDD2	SATA2
HDD3	SATA3
HDD4	SATA6G

If the cables connections are different, proceed as follows:

1. Change the cable connections as described in the table.
2. Adjust the boot order in the BIOS. To do so, follow the steps below.
3. Switch off the power supply to the server.
4. Connect a monitor/screen and keyboard to the server.
5. Switch on the power supply and press F2 to enter BIOS mode.
6. Choose **Boot**, and then choose **Boot Drive Order**.
   The screen displays the current boot order.
7. Put the D.O.M. (= Device on Module; its name is different from the disk names) at the top of the list.
   Use the + and – keys to move the D.O.M. in the list. Press Enter to confirm.
8. Choose **Exit**, and then choose **Exit & Save Changes**. Choose **Yes** to confirm.

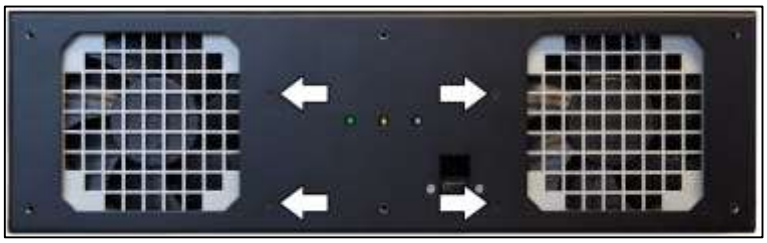
The server continues booting. If booting is successful, the Xtralis start window appears.

3.8 Adding Hard Disks with a MiTAC PH10LU Motherboard

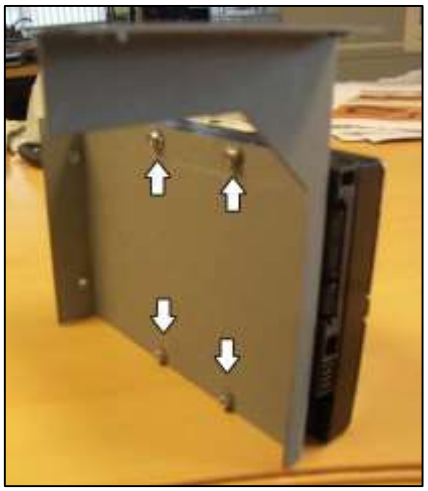
To add one or more hard disks with a MiTAC PH10LU motherboard, proceed as follows:

1. Switch off the power supply and remove the lid. Then remove the front plate.

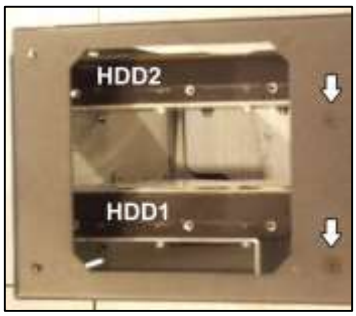
   You can now see the mounting holes for the disk bays:



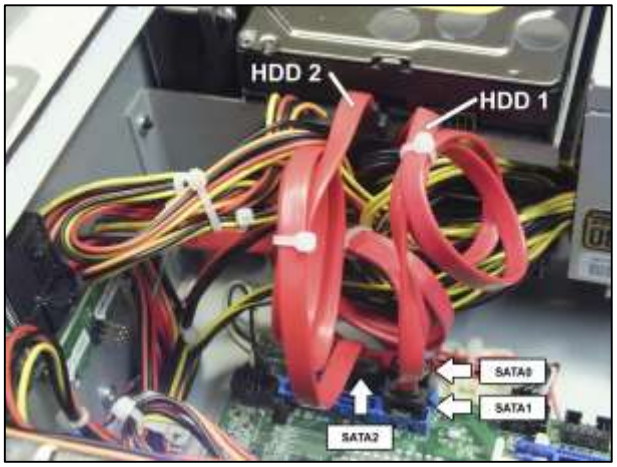
2. Fix the second disk to the support #1729121* with the screws #17434080 or #17434060 and dented washers M4 #17720050.



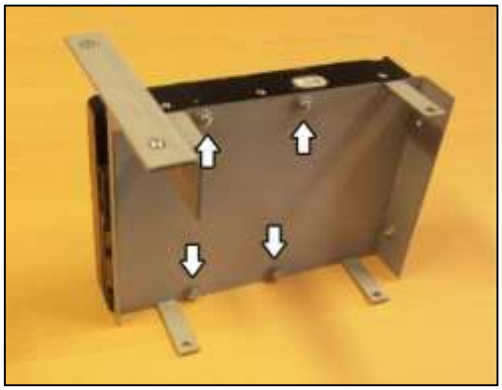
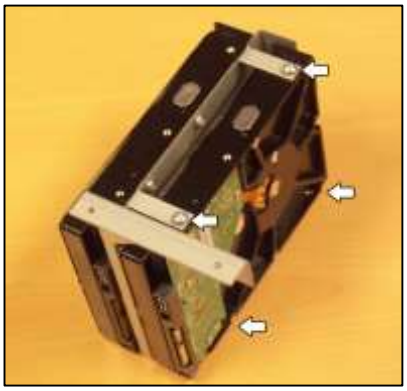
3. Fix the support to the casing with 4 screws (#17439080): 2 at the front, and 2 at the left side of the casing.



4. Connect the disk to the SATA2 connector on the motherboard with the SATA cable (#1652087*).



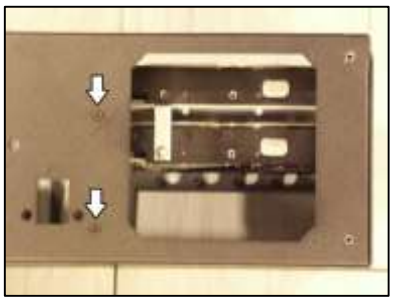
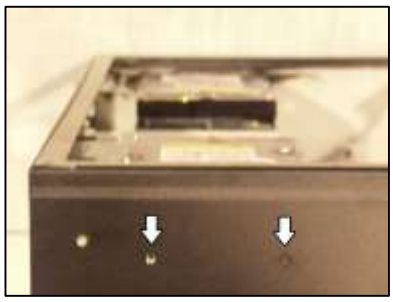
5. For the power supply to the disk, connect the remaining SATA power connector on the power cable of disk 1 (**not** the one on the tail end; that one is reserved for the D.O.M.) to the disk.
6. If you need to add more disks, continue with the next step.
   If you do not need to add more disks, continue with step 12.
7. Fix the third disk on the top side of the support for disk 3 and 4. If necessary, fix the fourth disk on the bottom side of the same support.

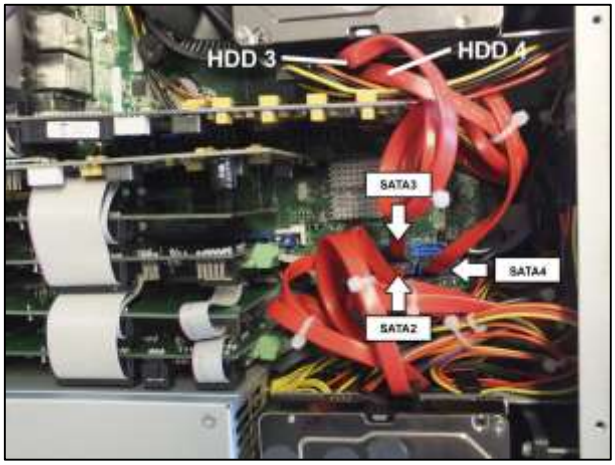
Note

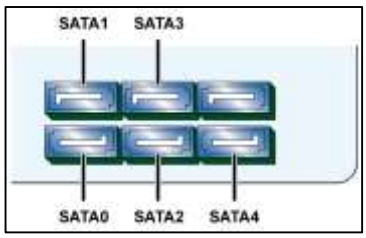
Make sure to install the disk on the **top side** of the support **first**.

8. Fix the support to the casing with 4 screws (#17439080): 2 at the front, and 2 at the right side of the casing.

9. Connect disk 3 to the SATA3 connector on the motherboard with a SATA cable (#1652087*).
10. If necessary, connect disk 4 to the SATA4 connector on the motherboard with a SATA cable (#1652087*).





> ***Caution!***
>
> Do not bend the SATA cables too sharply to prevent cable damage.

11. For the power supply to the disk, take an unused SATA power cable and connect it as follows:
    - Use the connector that is closest to the power supply for disk 4.
    - Use the next connector for disk 3.
12. If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

13. If there are unused cables left, bundle them with tie-wraps.

14. Fix the front plate (#1701164x or #1701166x) on the base with the screws (#17444080).
Put the cover in place and secure with 10 screws (#17439080).
15. Connect a monitor/screen and keyboard to the FastTrace 2 server. Switch on the power supply and wait for the boot window to appear.
16. Select **XOa Installer** and press Enter.
17. The next step depends on the type of hard disk that you are installing:
    - If the added hard disk is new, choose **Update current system > Manage recording disks** and select the new hard disk in the list. Press **Enter**. Then choose (using the tab key) **Format and use selected disks**. Choose **Main Menu** and choose **Reboot**.
    - If the added hard disk comes from another FastTrace 2 unit, choose **Update current system > Mount all recording disks**. Press **Enter**. Then choose **Main Menu** and choose **Reboot**.

The video system now reboots. After rebooting, the new hard disk is ready for use.

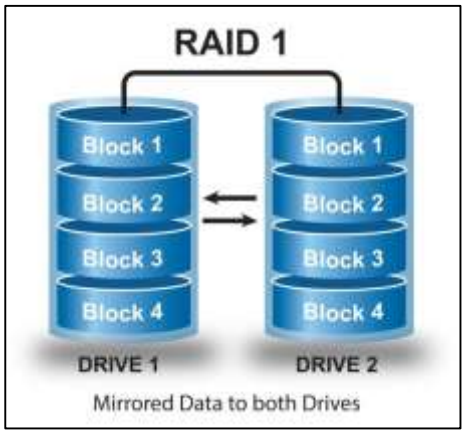
3.9 RAID 1 Support

From version 2.8.xx onwards, you can activate RAID 1.

3.9.1 About RAID 1

RAID stands for Redundant Array of Independent Disks (originally Redundant Array of Inexpensive Disks). It is a storage technology that combines multiple disk drive components into a logical unit. Data is distributed across the drives in one of several ways called RAID levels, depending on the level of redundancy and performance required. RAID has become an umbrella term for computer data storage schemes that can divide and replicate data among multiple physical drives, while the operating system can still access the data as being on one single drive.

RAID 1 is about mirroring without parity or striping. Data is written identically to two drives, thereby producing a “mirrored set”: the read request is serviced by either of the two drives containing the requested data, whichever one has the shortest search time plus rotational latency.



3.9.2 Activating RAID 1

RAID 1 requires a minimum of 2 hard disks. The size of the RAID 1 recording combination is the smaller of the 2 disks installed in your server. If, for example, you have a 1 TB disk and a 2 TB disk, the RAID 1 recording disk has a 1 TB capacity.

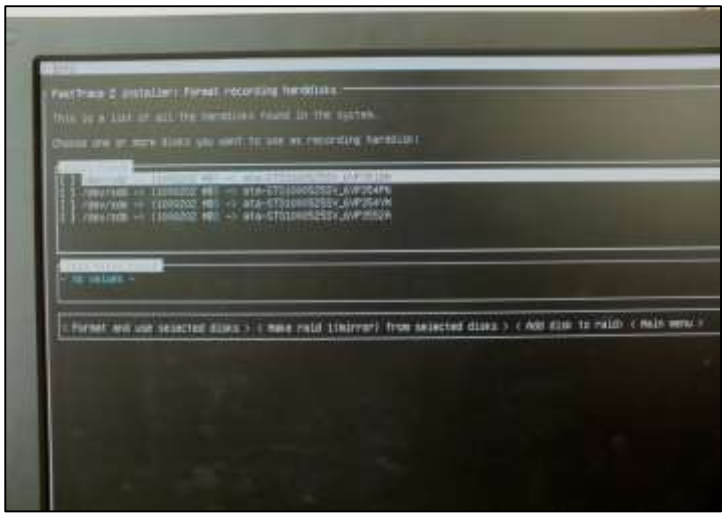
> ***Caution!***
>
> When you apply RAID 1, the system formats the selected disks and erases the data on the disks. You will lose all the data on the disks.

To activate RAID 1, proceed as follows:

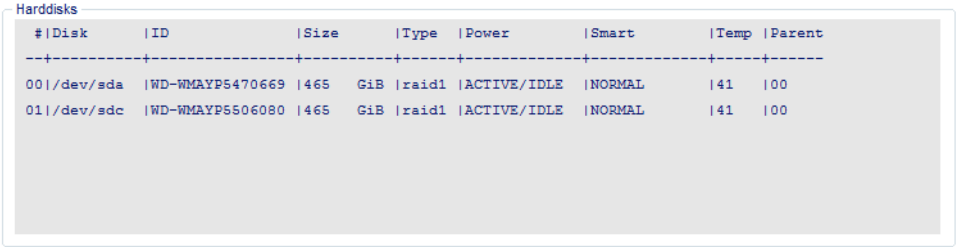
1. Reboot the server and access the **XOa Installer** menu.
2. Choose **Update current system**.
3. Choose **Manage recording disks**.
4. Use the arrows keys to select the desired hard disk and press **Enter** to activate the selection. An X appears in front of the selected hard disk (between the brackets). Select two hard disks, then choose **Make RAID 1 (mirror) from selected disks**.

   > ***Note***
   >
   > Do not select three or four disks. The third and fourth disk will then be configured as spare disks within the RAID 1 configuration. If you want to put disk 1 and 2 in RAID 1, and also disk 3 and 4 in RAID 1, execute this step twice.

5. When mirroring has finished, choose **Main menu**.
6. Choose **Reboot**.



You can check which disks are in RAID 1 mode in the XOa client software.
Launch the XOa client software and choose **System > Maintenance > Harddisks**. At the bottom of the window you find the **Harddisks** section. The **Type** column indicates whether the disk is a RAID 1 disk.


Harddisks
#|Disk |ID |Size |Type |Power |Smart |Temp |Parent
00|/dev/sda |WD-WMAYP5470669 |465 GiB |raid1 |ACTIVE/IDLE |NORMAL |41 |00
01|/dev/sdc |WD-WMAYP5506080 |465 GiB |raid1 |ACTIVE/IDLE |NORMAL |41 |00

4 Fan Speed Selection

Two large fans dissipate the heat. The fans have a switch to select the speed: low, medium, or fast. For most ambient temperatures, you can set the fan speed to medium. Change the fan speed only for extreme ambient temperatures.

Note

The most recent units are equipped with new models of fans. These models have no switch to select the speed. The speed is adjusted automatically.

5 Front LED Indicators

5.1 Overview

There are 3 LEDs on the front of the server:

Green LED		Power is on
Yellow LED		Fault
Blue LED		Storage media activity

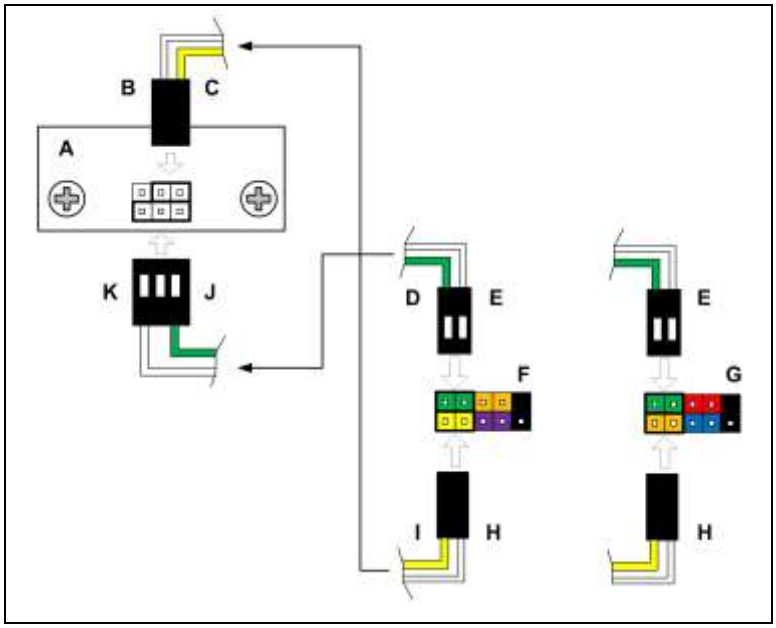
If the yellow LED lights up, check the status of your server. For more information, see the *XOa Client Software User Manual*.

Caution!

When the 3 LEDs are flashing simultaneously, the system is busy updating the recording disks. In that case, do not turn off power.

5.2 LED Connections without Main I/O Card

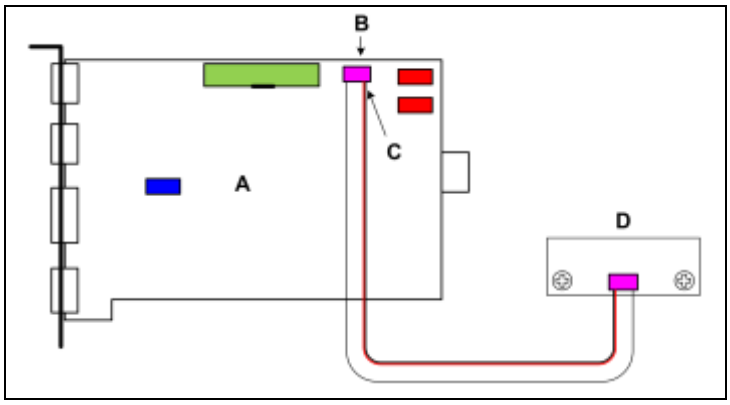
In a system without a Main I/O card, the LED board is connected directly to the motherboard.



A	Front LED board
B	White
C	Yellow
D	Green
E	White
F	Intel motherboard front panel connector
G	MiTAC motherboard front panel connector
H	White
I	Yellow
J	Green
K	White

5.3 LED Connections with Main I/O Card

In a system with a Main I/O card, the LED board is connected to the Main I/O card.



A	Main I/O card
B	6-pole LED connector
C	Red conductor
D	Front LED board

6 Required Motherboard

6.1 Overview

The FastTrace 2 video system only operates with an Intel DG31PR, Intel DG41TY, Intel DH55TC, Intel DH61BE, or MiTAC PH10LU motherboard.

Intel DG31PR motherboard 	Intel DG41TY motherboard
Intel DH55TC motherboard 	Intel DH61BE motherboard
MiTAC PH10LU motherboard 	

6.2 BIOS Settings

6.2.1 Intel DG31PR or Intel DG41TY Motherboard

Choose **Main > System Time** to set the system time.
Choose **Main > System Date** to set the system date.
Choose **Advanced > Numlock** and select the option **Off**.
Choose **Power > After Power Failure** and select the option **Power-On**.
Choose **Boot > Boot USB Devices First** and select the option **Enable**.
Choose **Exit > Exit & Save Changes** and select the option **Yes**.

All other parameters can be left to the default settings.

6.2.2 Intel DH55TC Motherboard

Choose **Main > System Time** to set the system time.
Choose **Main > System Date** to set the system date.
Choose **Advanced > Boot > Numlock** and select the option **Off**.
Choose **Advanced > Drive Configuration > Smart** and select the option **Disable**.
Choose **Advanced > Drive Configuration > Config AHCI** and select the option **On**.

Choose **Advanced > Event log > Event logging** and select the option **Disable**.
Choose **Advanced > Chipset Configuration > HPET** and select the option **Disable**.
Choose **Power > After Power Failure** and select the option **Power-On**.
Choose **Exit > Exit & Save Changes** and select the option **Yes**.

All other parameters can be left to the default settings.

6.2.3 Intel DH61BE Motherboard

Choose **Main > System Time** to set the system time.
Choose **Main > System Date** to set the system date.
Choose **Configuration > SATA drives > Smart** and select the option **Disable**.
Choose **Configuration > SATA drives > Chipset SATA** mode and select the option **AHCI**.
Choose **Configuration > Event log > Event logging** and select the option **Disable**.

If necessary (with newer BIOS versions): Choose **Security > Chassis Intrusion** and select the option **Disable**.

Choose **Power > After Power Failure** and select the option **Power-On**.
Choose **Boot > Hard drive order** and place the DOM *CSS HSV40-256M* at the top of the list, using the arrows keys on the keyboard to select the DOM, and the + key to move the selected DOM upwards. Press **Enter**.
Choose **Exit > Exit & Save Changes** and select the option **Yes**.

All other parameters can be left at the default settings.

Note

With the Intel DH61BE motherboard, you need to reset the BIOS settings every time you replace or add a hard disk.

6.2.4 MiTAC PH10LU Motherboard

Choose **Main > System Time** to set the system time.
Choose **Main > System Date** to set the system date.
Choose **Chipset > PCH-IO Configuration > Front Panel Audio** and select the option **Legacy Front Panel**.
Choose **Boot > CSM parameters > Launch PXE OPROM policy** and select the option **Legacy only**.
Choose **Save & Exit > Exit and Reset** and press Enter.

All other parameters can be left at the default settings.

6.3 Replacing the Motherboard

Do not replace the motherboard in the field. If the motherboard needs replacing, send back the server to your supplier.

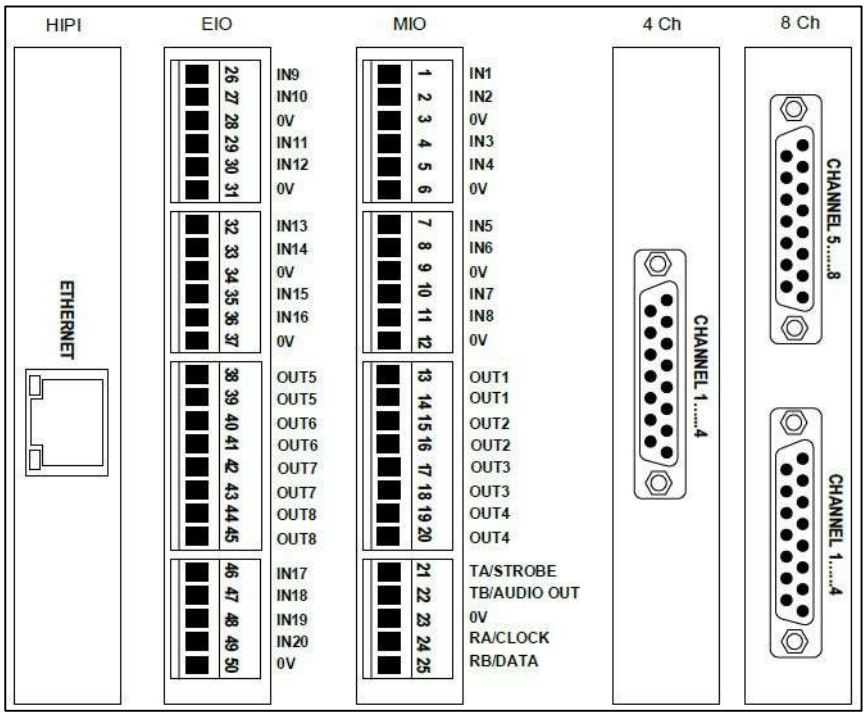
6.4 Replacing the Motherboard Battery

It may be necessary to replace the motherboard battery after some time of specific battery faults. For further instructions, see the technical documentation of the specific motherboard.

7 Extension Boards

7.1 Overview

Type	Description
HIPI	PCI Express extension board for 8 IP cameras. (Not compatible with MiTAC PH10LU motherboard) See also technical datasheet *19531930 – HIPI card*.
Ethernet	For FastTrace 2E only: Ethernet connection for IP camera network up to 32 IP cameras. An Ethernet card is not required with the MiTAC PH10LU motherboard.
4ch/8ch DS40xx	PCI extension board for 4 or 8 analogue cameras, including audio inputs per camera. ***Note*** Use these PCI cards on an Intel DG31PR or Intel DG41TY motherboard.
4ch/8ch DS42xx	PCI Express extension board for 4 or 8 or 16 analogue cameras, including audio inputs per camera. ***Note*** Use these PCI Express cards on an Intel DH55TC, Intel DH61BE, or MiTAC PH10LU motherboard.
Main I/O	Main Input Output board: USB extension card, inserted by default in the free slots, or if necessary in a free PCI or PCI Express connector. For more information, see technical datasheet *19531920 – Main & Extension I/O Cards* or *19531900 – Main I/O and Extension I/O Next Generation*.
Extension I/O	Extension Input Output board: extension board, inserted by default in the free slots, or if necessary in a free PCI of PCI Express connector and linked to the Main I/O board, extending the number of inputs and outputs. For more information, see technical datasheet *19531920 – Main & Extension I/O Cards* or *19531900 – Main I/O and Extension I/O Next Generation*.



7.2 General Rules

The FastTrace 2 video system offers 6 extension slots:

- On Intel DG31PR and Intel DG41TY motherboards: two PCI Express slots, two PCI slots, and two physical slots.
- On Intel DH55TC and Intel DH61BE motherboards: three PCI Express slots, one PCI slot, and two physical slots.
- On the MiTAC PH10LU motherboard: four PCI Express slots, and two physical slots.

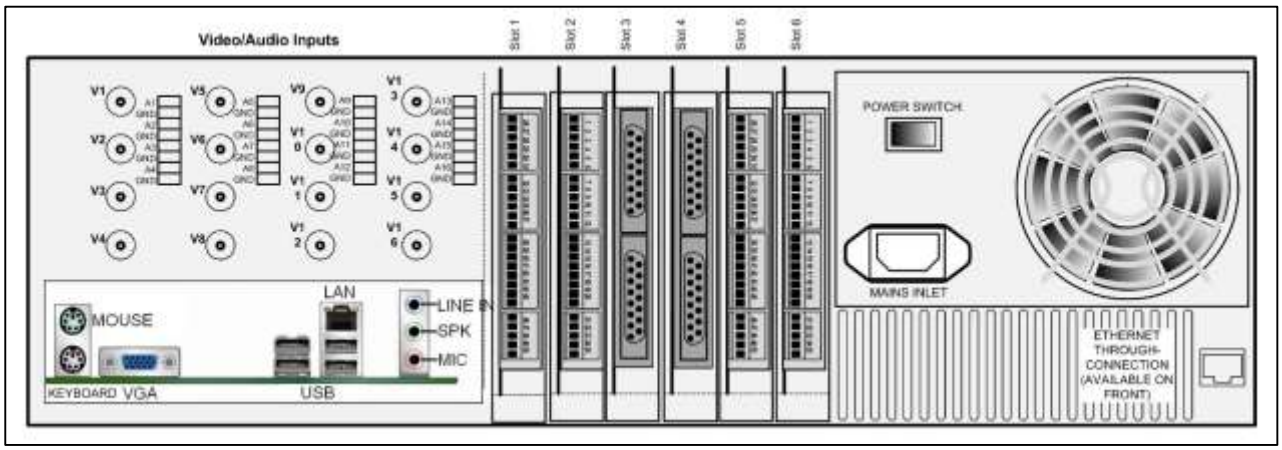
You can insert a HIPI card only in a PCI Express slot. HIPI cards are not allowed on the PH10LU motherboard.

The A/V cards type DS40xx require a PCI slot. The A/V cards type DS42xx require a PCI Express slot. They also require different types of motherboard, so you cannot mix DS40xx and DS42xx cards.

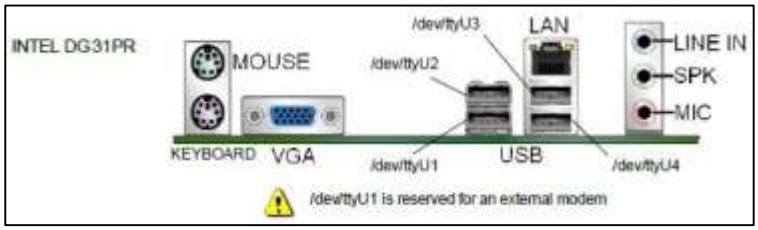
You can insert Main I/O and Extension I/O cards anywhere, in any free slot. The MIO card is connected to an internal USB connector, and the EIO card is connected to the MIO card via a flat cable.

7.3 Available Configurations

7.3.1 With Intel DG31PR Motherboard



7.3.1.1 Network/Monitor/Keyboard



Note

You must restart the XOa client software after connecting devices to a USB port.
USB input 1 (/dev/ttyU1) is reserved for an external modem.

7.3.1.2 Extension Slots

Slot	Type	Accepts
1	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras

Slot	Type	Accepts
2	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras
3	PCI	Main I/O Extension I/O A/V with 4 or 8 channels (lowest camera numbers: CAM 1 > 4/8)
4	PCI	Main I/O Extension I/O A/V with 4 or 8 channels (highest camera numbers: CAM 5/9 > 8/16)
5	/	Extension I/O
6	/	Main I/O

7.3.1.3 The Xtralis Configurations

Analogue Cameras (4 – 8 – 12 – 16 Channels)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	Main I/O 2
3	PCI	A/V 4 channels 1 or A/V 8 channels 2
4	PCI	A/V 8 channels 1
5	/	Extension I/O 1
6	/	Main I/O 1

IP Cameras (8 or 16 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	HIPI (ETH2)
3	PCI	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

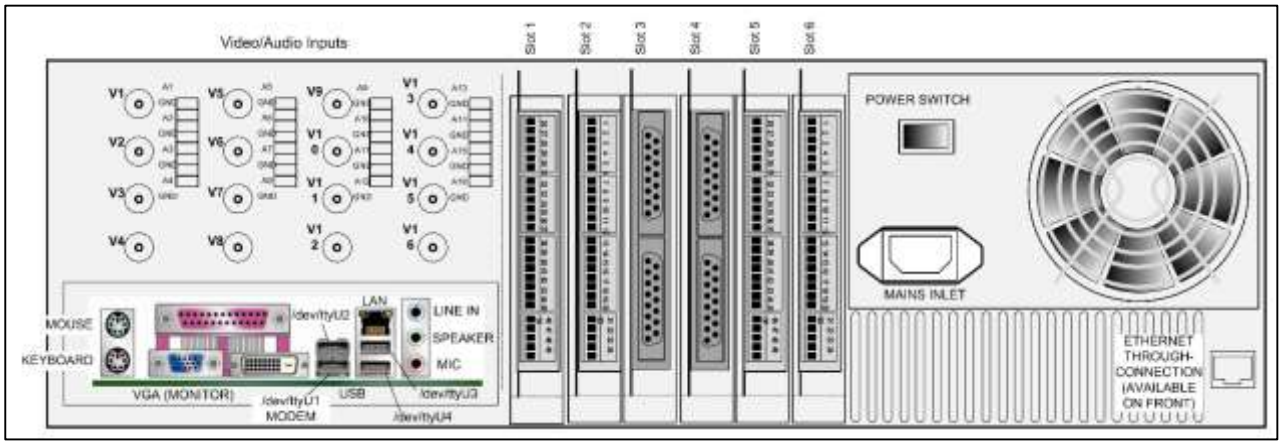
Hybrid (12 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	Extension I/O 2
3	PCI	A/V 4 channels 1
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

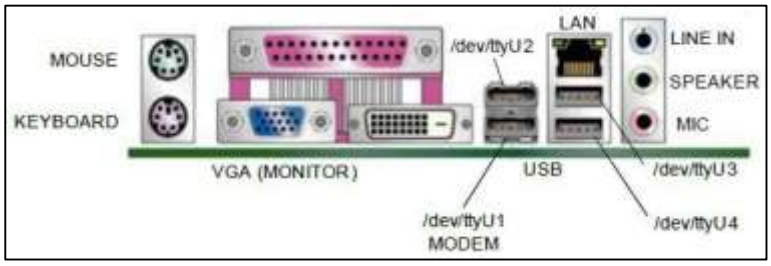
Hybrid (16 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	Extension I/O 2
3	PCI	Main I/O 2
4	PCI	A/V 8 channels 1
5	/	Extension I/O 1
6	/	Main I/O 1

7.3.2 With Intel DG41TY Motherboard



7.3.2.1 Network/Monitor/Keyboard



Note

You must restart the XOa client software after connecting devices to a USB port.
USB input 1 (/dev/ttyU1) is reserved for an external modem.

7.3.2.2 Extension Slots

Slot	Type	Accepts
1	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras
2	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras
3	PCI	Main I/O Extension I/O A/V with 4 or 8 channels (lowest camera numbers: CAM 1 > 4/8)

Slot	Type	Accepts
4	PCI	Main I/O Extension I/O A/V with 4 or 8 channels (highest camera numbers: CAM 5/9 > 8/16)
5	/	Extension I/O
6	/	Main I/O

7.3.2.3 The Xtralis Configurations

Analogue Cameras (4 – 8 – 12 – 16 Channels)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	Main I/O 2
3	PCI	A/V 4 channels 1 or A/V 8 channels 2
4	PCI	A/V 8 channels 1
5	/	Extension I/O 1
6	/	Main I/O 1

IP Cameras (8 or 16 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	HIPI (ETH2)
3	PCI	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

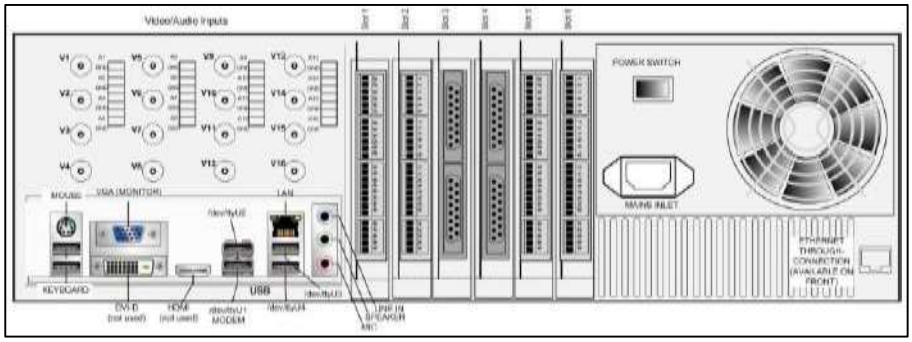
Hybrid (12 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	Extension I/O 2
3	PCI	A/V 4 channels 1
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

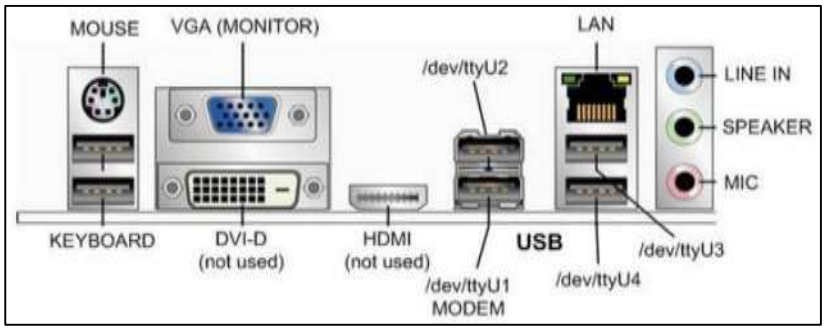
Hybrid (16 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	Extension I/O 2
3	PCI	A/V 8 channels 1
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

7.3.3 With Intel DH55TC Motherboard



7.3.3.1 Network/Monitor/Keyboard



Note

You must restart the XOa client software after connecting devices to a USB port.
USB input 1 (/dev/ttyU1) is reserved for an external modem.

7.3.3.2 Extension Slots

Slot	Type	Accepts
1	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras A/V with 4 or 8 channels
2	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras A/V with 4 or 8 channels
3	PCI Express	Main I/O Extension I/O A/V with 4 or 8 or 16 channels
4	PCI	Main I/O Extension I/O
5	/	Main I/O Extension I/O
6	/	Main I/O Extension I/O

When using A/V cards of equal A/V inputs, attribute the lowest camera numbers to the A/V card that is in or closest to slot 1.

When combining a 4CH and an 8CH A/V card, attribute the lowest camera numbers to the 4CH A/V card.

Example: camera numbers 1–4 allocated to the 4CH A/V card, and numbers 5–12 allocated to the 8CH A/V card.

> ***Note***
>
> Only the A/V cards type DS42xx are allowed on the Intel DH55TC motherboard.

7.3.3.3 The Xtralis Configurations

Analogue Cameras (4 Channels)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	A/V 4 channels 1 (DS42xx)
3	PCI Express	
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (8 Channels)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	A/V 8 channels 1 (DS42xx)
3	PCI Express	
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (12 Channels)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	A/V 4 channels 1 (DS42xx)
3	PCI Express	A/V 8 channels 1 (DS42xx)
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (16 Channels)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	
3	PCI Express	A/V 16 channels 1 (DS42xx)
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

IP Cameras (8 or 16 Channels)

Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	HIPI (ETH2)
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Hybrid (12 Channels)

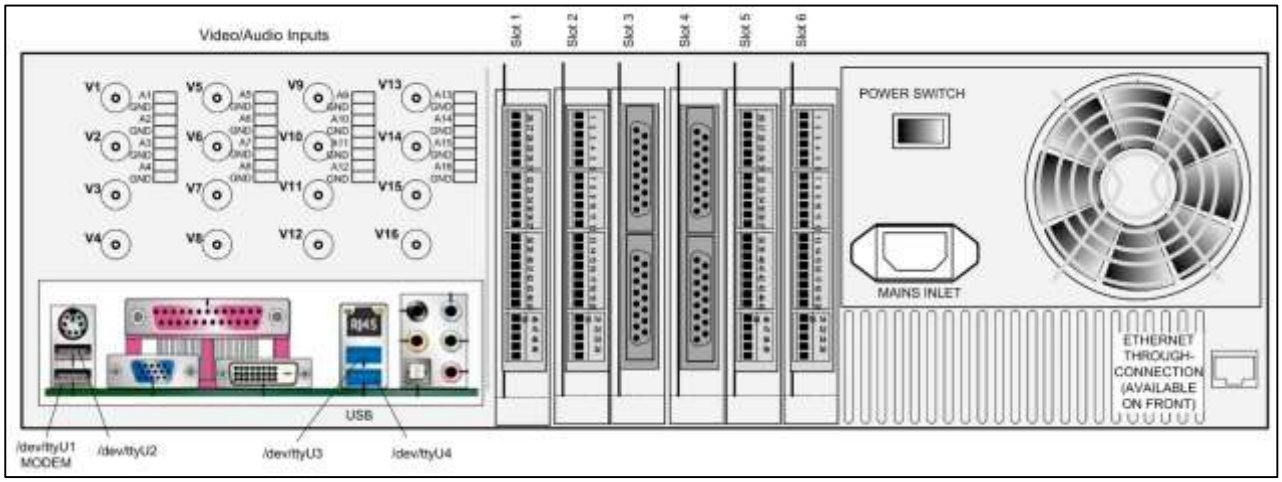
Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	Extension I/O 2
3	PCI Express	A/V 4 channels 1
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Hybrid (16 Channels)

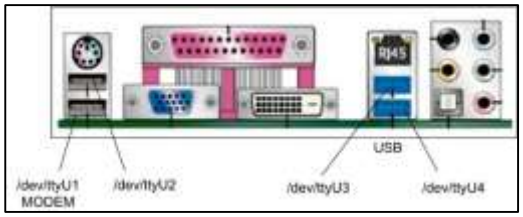
Slot	Type	Extension Card
1	PCI Express	HIPI (ETH1)
2	PCI Express	Extension I/O 2
3	PCI Express	A/V 8 channels 1
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

A sticker below each slot, visible from the back of the appliance, indicates which card has been installed at that position.

7.3.4 With Intel DH61BE Motherboard



7.3.4.1 Network/Monitor/Keyboard



Note

You must restart the XOa client software after connecting devices to a USB port.
USB input 1 (/dev/ttyU1) is reserved for an external modem.

7.3.4.2 Extension Slots

Slot	Type	Accepts
1	PCI Express	Main I/O Extension I/O A/V with 4 or 8 or 16 channels
2	PCI Express	Main I/O Extension I/O HIPI (ETH1) for 8 IP cameras Ethernet Card A/V with 4 or 8 channels
3	PCI Express	Main I/O Extension I/O HIPI (ETH2) for 8 IP cameras A/V with 4 or 8 channels
4	PCI	Main I/O Extension I/O
5	/	Main I/O Extension I/O
6	/	Main I/O Extension I/O

When using A/V cards of equal A/V inputs, attribute the lowest camera numbers to the A/V card that is in or closest to slot 1.

When combining a 4CH and an 8CH A/V card, attribute the lowest camera numbers to the 4CH A/V card.

Example: camera numbers 1–4 allocated to the 4CH A/V card, and numbers 5–12 allocated to the 8CH A/V card.

Note

Only the A/V cards type DS42xx are allowed on the Intel DH61BE motherboard.

7.3.4.3 The Xtralis Configurations for FastTrace 2 Units

From December 2013 onwards the FastTrace 2 will only be available as an analogue-only unit. Existing FastTrace 2 IP and/or Hybrid units can no longer be expanded.

Analogue Cameras (4 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 4 channels 1 (DS42xx)
2	PCI Express	

Slot	Type	Extension Card
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (8 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 8 channels 1 (DS42xx)
2	PCI Express	
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (12 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 4 channels 1 (DS42xx)
2	PCI Express	A/V 8 channels 1 (DS42xx)
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (16 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 16 channels 1 (DS42xx)
2	PCI Express	
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

IP Cameras (8 or 16 Channels with 1 or 2 HIPI Cards)

Slot	Type	Extension Card
1	PCI Express	Extension I/O 2
2	PCI Express	HIPI (ETH1)
3	PCI Express	HIPI (ETH2) (only when 16 channels)
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Hybrid (12 Channels with 1 HIPI Card)

Slot	Type	Extension Card
1	PCI Express	A/V 4 channels 1
2	PCI Express	HIPI (ETH1)
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Hybrid (16 Channels with 1 HIPI Card)

Slot	Type	Extension Card
1	PCI Express	A/V 8 channels 1
2	PCI Express	HIPI (ETH1)
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

7.3.4.4 The Xtralis Configurations for FastTrace 2E Units

Analogue Cameras (4 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 4 channels 1 (DS42xx)
2	PCI Express	Ethernet Card
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (8 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 8 channels 1 (DS42xx)
2	PCI Express	Ethernet Card
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (12 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 4 channels 1 (DS42xx)
2	PCI Express	A/V 8 channels 1 (DS42xx)
3	PCI Express	Ethernet card

Slot	Type	Extension Card
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

If you want to use a second Extension I/O card, you have to replace either the Ethernet card or one of the analogue video cards in the PCI Express slots.

Analogue Cameras (16 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 16 channels 1 (DS42xx)
2	PCI Express	Ethernet Card
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

Analogue Cameras (20 Channels)

Slot	Type	Extension Card
1	PCI Express	A/V 16 channels 1 (DS42xx)
2	PCI Express	A/V 4 channels 1 (DS42xx)
3	PCI Express	Ethernet card
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

If you want to use a second Extension I/O card, you have to replace either the Ethernet card or one of the analogue video cards in the PCI Express slots.

IP Cameras (Up to 32 Channels* with 1 Ethernet Card)

Slot	Type	Extension Card
1	PCI Express	
2	PCI Express	Ethernet Card
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

(*) You can purchase IP camera licenses individually or in sets of 4. Depending on the license(s) you have purchased, you will have 1-32 video channels available. The full 32 channels are only available on FastTrace 2E models with XOa firmware installed, an Intel DH61BE or MiTAC PH10LU motherboard, and 4 GB RAM or more. On any other model, maximum 16 IP channels are available.

Note

You can use the Ethernet card only on FastTrace 2E units.

Hybrid (up to 32 Channels* with 1 Ethernet Card)

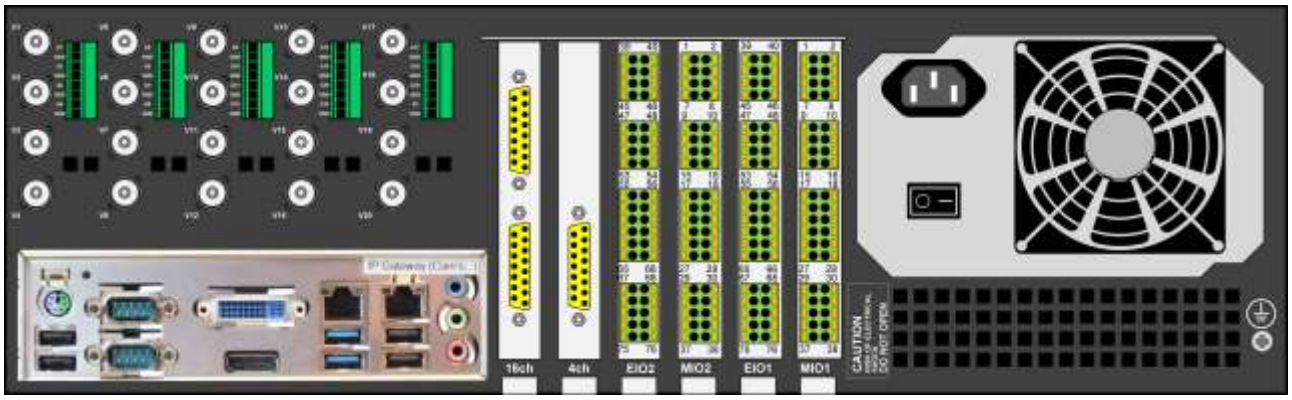
Slot	Type	Extension Card
1	PCI Express	A/V 4 or A/V 8 or A/V 16 channels
2	PCI Express	Ethernet Card
3	PCI Express	Extension I/O 2
4	PCI	Main I/O 2
5	/	Extension I/O 1
6	/	Main I/O 1

(*) You can purchase IP camera licenses individually or in sets of 4. Depending on the license(s) you have purchased, you will have 1-32 video channels available. The full 32 channels are only available on FastTrace 2E models with XOa firmware installed, an Intel DH61BE or MiTAC PH10LU motherboard, and 4 GB RAM or more. On any other model, maximum 16 IP channels are available.

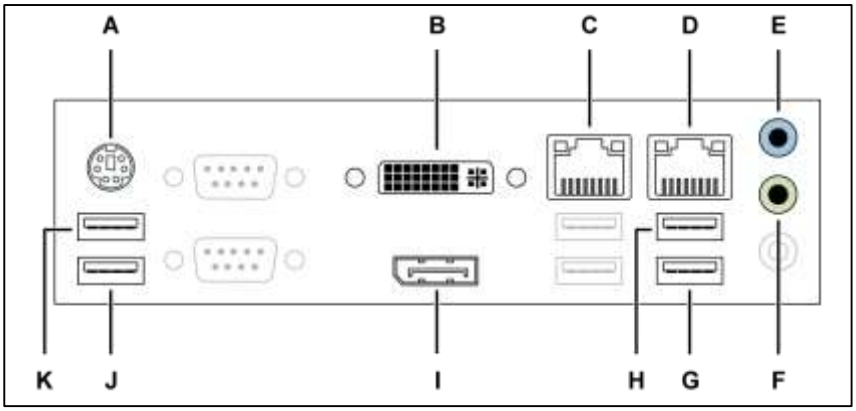
Note

You can use the Ethernet card only on FastTrace 2E units.
You cannot use HIPI cards on FastTrace 2E units.

7.3.5 With MiTAC PH10LU Motherboard



7.3.5.1 Network/Monitor/Modem



A	PS/2 (keyboard)	**G**	dev/ttyU4 (USB)
B	DVI-I (monitor)	**H**	dev/ttyU3 (USB)
C	ETH0: network for FastTrace 2 device	**I**	DisplayPort (monitor)
D	ETH1: IP gateway, network for IP cameras…	**J**	dev/ttyU1 (USB, modem)
E	Audio line in	**K**	dev/ttyU2 (USB)
F	Audio line out		

7.3.5.2 The Xtralis Configurations

The table below shows the possible configurations with a MiTAC PH10LU motherboard:

	Slot					
Type	1 PCI Express	2 PCI Express	3 PCI Express	4 PCI Express	5 –	6 –
Analogue 4 ch	A/V 4 ch	–	EIO 2	MIO 2	EIO 1	MIO 1
Analogue 8 ch	A/V 8 ch	–				
Analogue 12 ch	A/V 4 ch	A/V 8 ch				
Analogue 16 ch	A/V 16 ch	–				
Analogue 20 ch	A/V 16 ch	A/V 4 ch				
Digital 1–32 ch	–	–				
Hybrid 32 ch (4 analogue)	A/V 4 ch	–				
Hybrid 32 ch (8 analogue)	A/V 8 ch	–				
Hybrid 32 ch (12 analogue)	A/V 4 ch	A/V 8 ch				
Hybrid 32 ch (16 analogue)	A/V 16 ch	–				

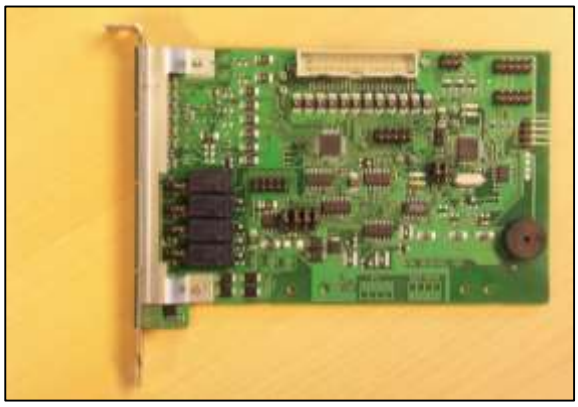
Analogue x ch = unit with analogue cameras only, x = the number of channels
Digital x ch = unit with IP cameras only, x = the number of channels
Hybrid x ch (y analogue) = unit with analogue and IP cameras, x = the total number of channels, y = the number of analogue channels
A/V x ch = analogue video card, x = the number of channels

8 Main and Extension I/O Cards

8.1 Features

> ***Note***
>
> With the FastTrace 2E Series, Xtralis introduced the Next Generation I/O cards. If you are using Next Generation cards with your FastTrace 2E unit, see *Main and Extension I/O Cards Next Generation* on page 57.

The Main I/O (MIO) and Extension I/O (EIO) cards are internal I/O cards, to be fitted inside the ADPRO FastTrace 2 system. They are also called OTB (on-the-board) cards.



These I/O cards offer:

- 8 tamper-protected inputs and 4 relay outputs (rated 14 VDC @ 1 A) on the Main I/O card
- 12 tamper-protected inputs and 4 relay outputs on the Extension I/O card
- driver for PTZ cameras (half/full duplex RS-485) or audio module/VM22A audio switcher (selected by jumpers on the card)
- driver for front LED indicators on FastTrace 2 model
- auto-detected cards on FastTrace 2 system

8.2 Possible Configurations

You can configure maximum 2 sets of I/O cards on the FastTrace 2:

- Main I/O only
- Main I/O + Extension I/O
- 2 x Main I/O + Extension I/O
- 2 x Main I/O + 2 x Extension I/O

> ***Note***
>
> With an ENTRY system license you can install only 1 Main I/O card. Multiple Main I/O cards are not supported. Also, an ENTRY system does not support Extension I/O cards. This is for instance the case with the ADPRO FastTrace 2 Lite.

8.3 Ordering Information

Use these reference numbers to place your order with Xtralis:

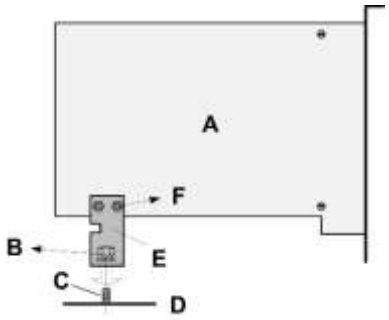
Item	Reference Number
Main I/O card	39544070
Main I/O card plus mounting set	39544000
Extension I/O card	39544080
Extension I/O card plus mounting set	39544010

8.4 Physical Position

Insert the first set of I/O cards in the two furthermost slots (= nearest to the power supply). Use the L-shaped brackets to fix the cards to the chassis. Insert the Main I/O card in the furthermost slot (= slot 6).

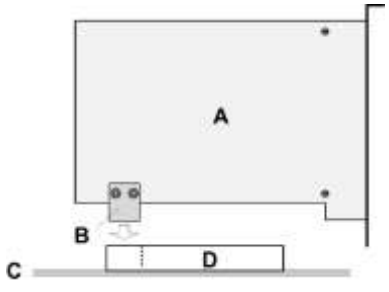
Insert the second set in the PCI or PCI Express slots on the motherboard using the included PCI or PCI Express Inserters. Depending on the type of motherboard, you need either a PCI or PCI Express Inserter.

Mounting on chassis:



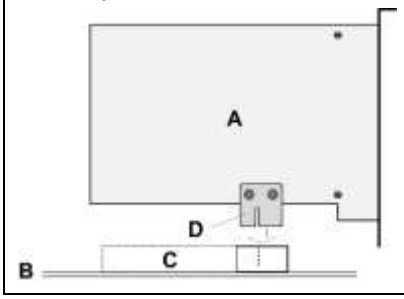
A	I/O card, bottom side
B	Locknut (#17439010)
C	M3 stud
D	Chassis
E	L-shaped metal bracket (#17291141) – on top side
F	Screw M2.5 (#17420060) Nut M2.5 (#17429000) Dented washer M2.5 (#17720090)

PCI connector:



A	I/O card, bottom side
B	PCI inserter (#17291100)
C	Motherboard
D	PCI connector

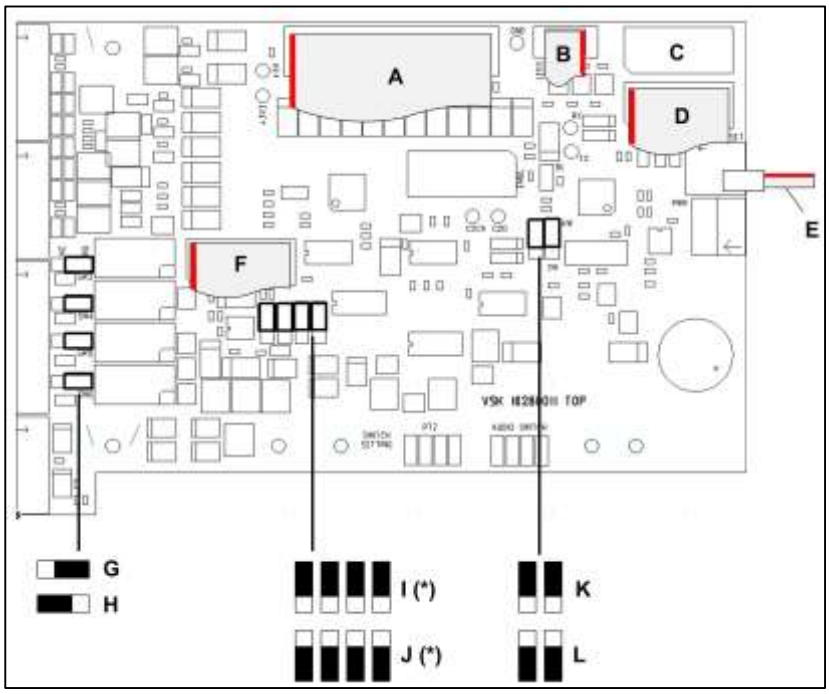
PCI Express connector:



A	I/O card, bottom side
B	Motherboard
C	PCI Express connector
D	PCI Express inserter (#17291110)

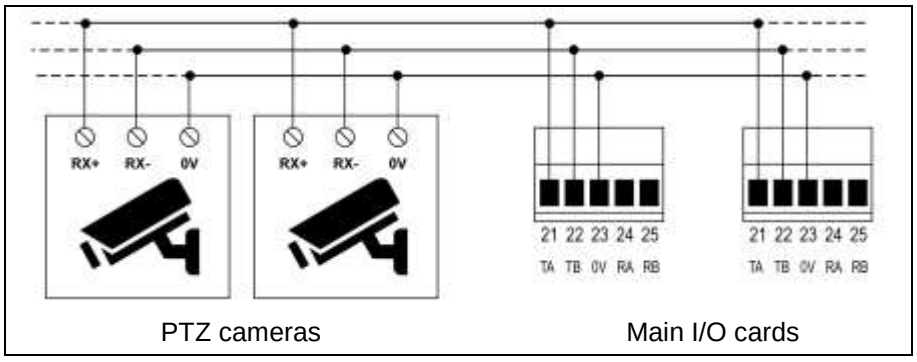
8.5 Settings on the Main I/O Card

If you are connecting PTZ cameras from the same RS-485 bus to multiple FastTrace 2 servers, set the RS-485 PTZ jumper on the Main I/O card to the 2-wire (PTZ) position.
RS-485 cable length: max. 1200 m.



A	To Extension I/O card (#21760300)	**G**	Jumper setting: normally open relay contact
B	To front LEDs (#21760101)	**H**	Jumper setting: normally closed relay contact
C	USB port; to second Main I/O card	**I**	Jumper setting: PTZ output (*)
D	To nearest USB port on motherboard (#16540260)	**J**	Jumper setting: VM22A output (*)
E	Reset signal from motherboard (#21760401)	**K**	RS-485 PTZ jumper: 4-wire setting (default setting)
F	To AUDIO on motherboard (#16540280)	**L**	RS-485 PTZ jumper: 2-wire setting

(*) PTZ/VM22A:
On 1st Main I/O: addressed as /dev/ttyU6.
On 2nd Main I/O: addressed as /dev/ttyU8.



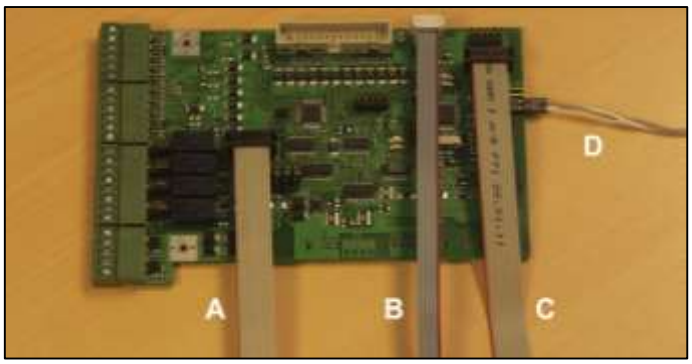
8.6 Installation

To install the Main I/O card, proceed as follows:

1. Switch off the power supply, and remove the lid from the server.
2. Remove any superfluous blind brackets.

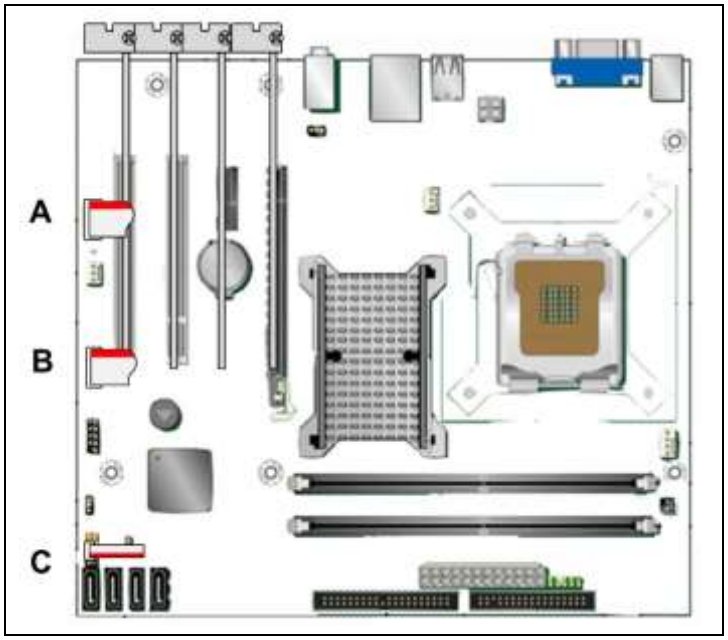
3. Remove the two cables that connect the LED board on the front to the motherboard. The LEDs will be powered from the Main I/O card (of the 1st set).

4. Before inserting the Main I/O card into the motherboard, connect all necessary cables to the card. See the table below for an overview of cable connections.

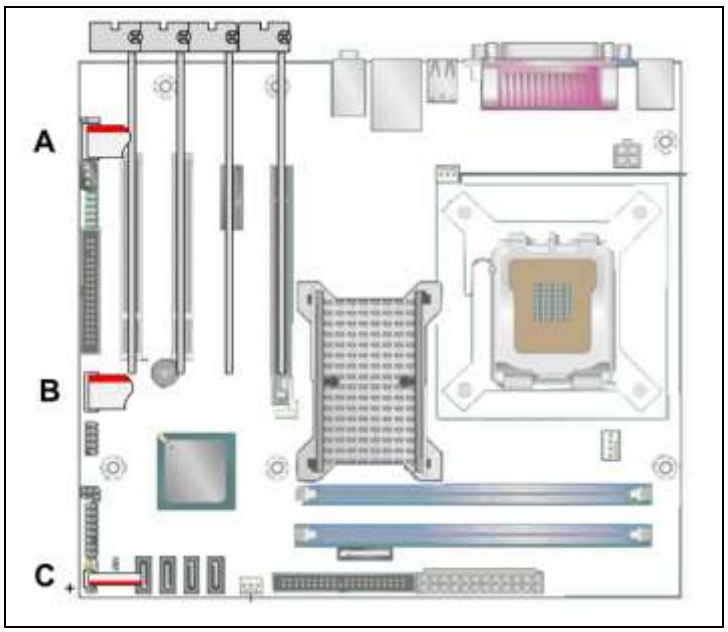


	From	To	Cable
A	MIO 1	Motherboard audio	#16540280
B	MIO 1	Front LED board	#21760101
C	MIO 1	Motherboard USB	#16540260
D	MIO 1	Motherboard reset. For more information, see *Reset Signal Details* on page 53.	#21760401

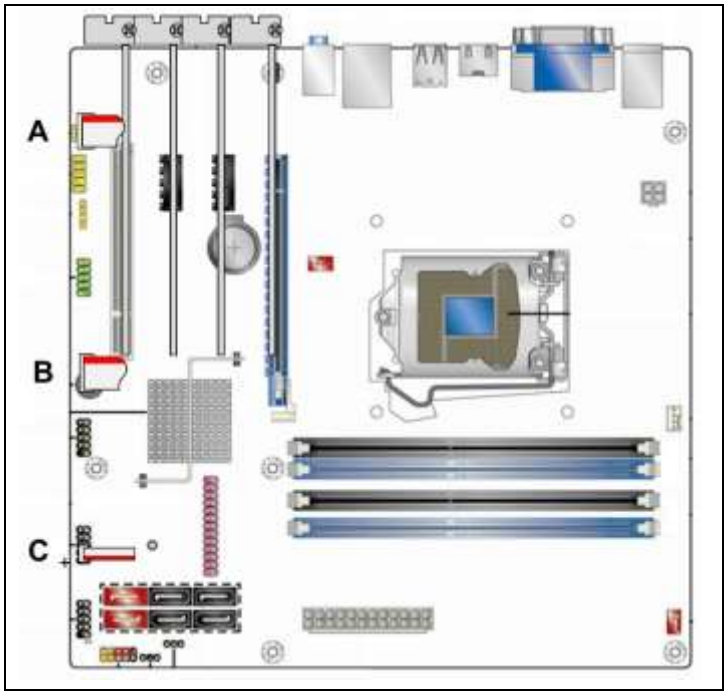
5. Insert the I/O card in the appropriate slot. For more information, see *Physical Position* on page 49.
6. Connect the cables from the I/O card to the motherboard as indicated in the illustrations below.



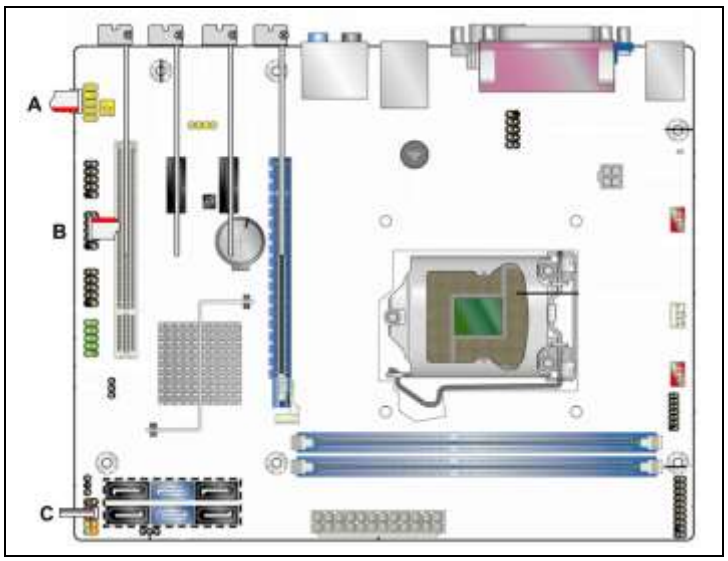
DG31PR motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card)
C	Reset (to MIO card)



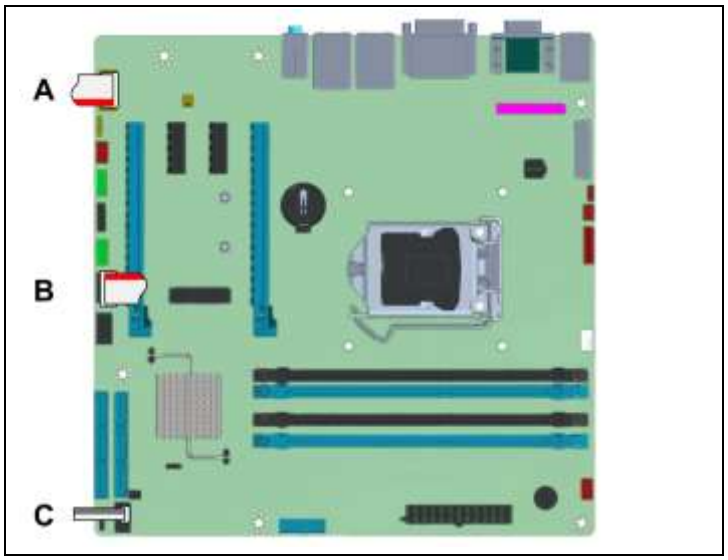
DG41TY motherboard	
A	AUDIO (to MIO card), use adapter #16500660
B	USB (to MIO card)
C	Reset (to MIO card)



DH55TC motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card)
C	Reset (to MIO card)

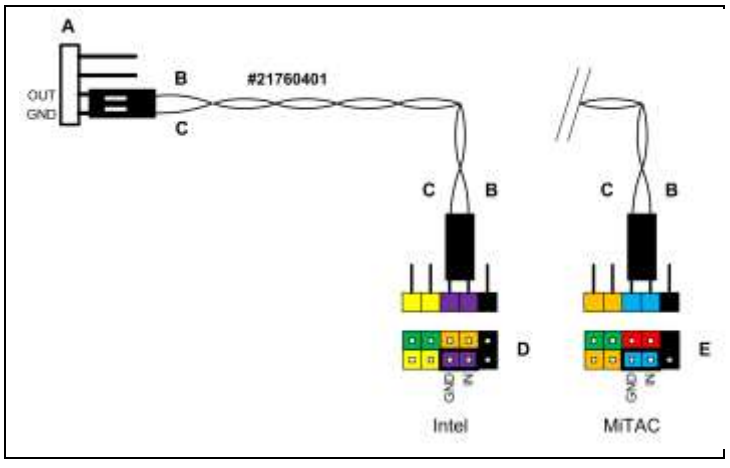


DH61BE motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card), use adapter #16500660
C	Reset (to MIO card)



PH10LU motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card), use adapter #16500665
C	Reset (to MIO card)

8.7 Reset Signal Details



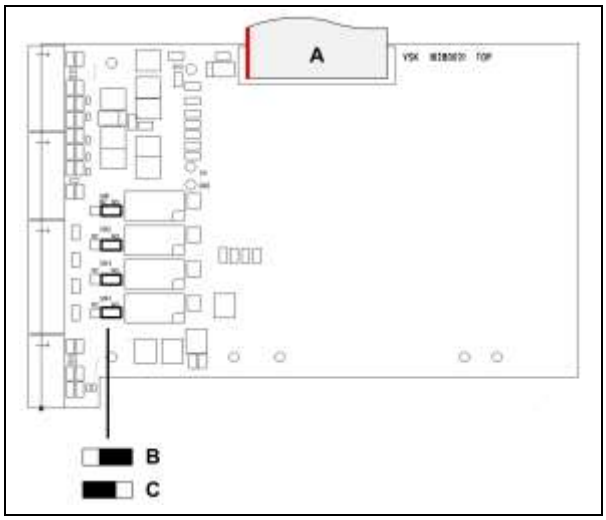
A	Connector – Main I/O
B	Grey wire
C	White wire
D	Intel motherboard
E	MiTAC motherboard

Note

Check the polarity! If you reverse the connection, the motherboard receives a permanent reset signal.

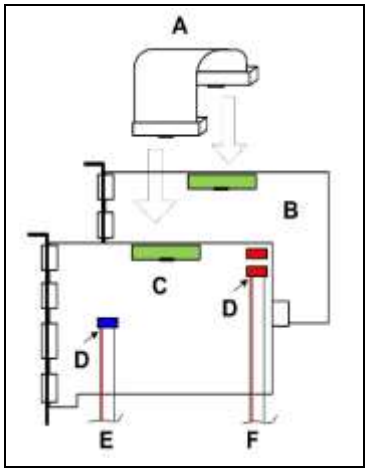
8.8 Adding an Extension I/O Card

8.8.1 Settings on the Extension I/O Card



A	From Main I/O card (#21760300)
B	Jumper setting: normally open relay contact
C	Jumper setting: normally closed relay contact

8.8.2 Installation

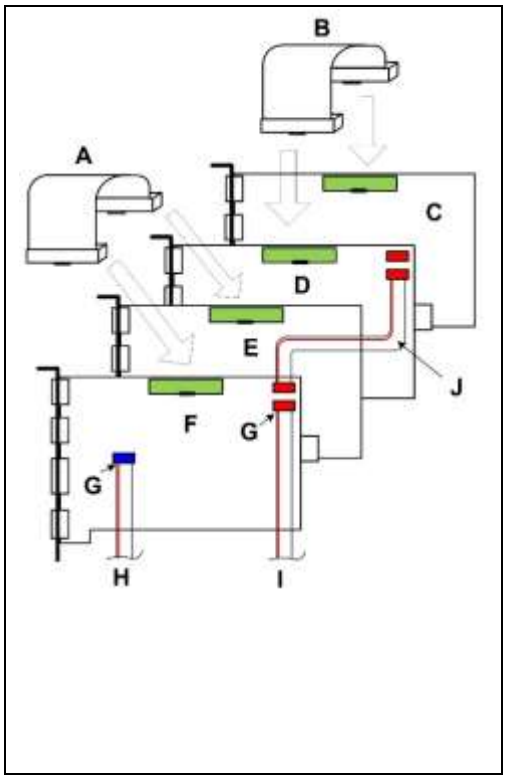


A	Flat cable (#21760300)
B	Extension I/O card
C	Main I/O card
D	Red conductor = pin 1
E	To motherboard AUDIO connector
F	To motherboard USB connector

To install an Extension I/O card, proceed as follows:

1. Insert the extension card into an appropriate slot on the motherboard. See *Physical Position* on page 49.
2. Connect the Main I/O card to the Extension I/O card using flat cable #21760300 (A).

8.9 Adding a Second Set of I/O Cards

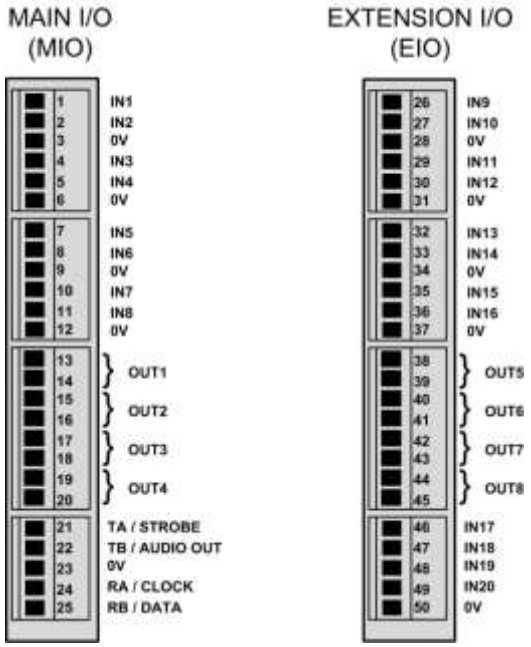


A	Flat cable (#21760300)
B	Flat cable (#21760300)
C	EIO 2
D	MIO 2
E	EIO 1
F	MIO 1
G	Red conductor = pin 1
H	To motherboard AUDIO connector
I	To motherboard USB connector (MIO 1 only)
J	Flat cable (#16540260)

To insert a second set of I/O cards, proceed as follows:

1. Insert all cards into appropriate slots (see *Physical Position* on page 49).
2. Connect MIO 1 to EIO 1 using flat cable #21760300 (A).
3. Connect MIO 2 to EIO 2 using a flat cable #21760300 (B).
4. Connect MIO 1 to MIO 2 using a flat cable #16540260 (J).

8.10 Connection of Inputs/Outputs

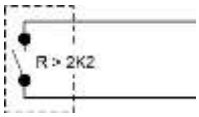


8.11 Configuring the Internal I/O Cards

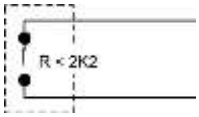
The FastTrace 2 server automatically detects all connected MIO and EIO cards. To configure the inputs and outputs, see the *XOa Client Software User Manual*.

8.12 Input Circuits

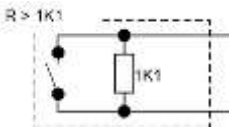
Use the ADPRO XOa client to configure the inputs as NEOL, SEOL, or DEOL.



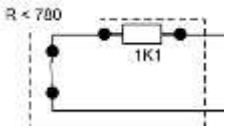
Normally open – NEOL
Short circuit = alarm
Open circuit = idle



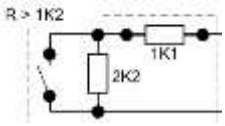
Normally closed – NEOL
Short circuit = idle
Open circuit = alarm



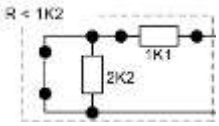
Normally open – SEOL
Short circuit = alarm
1K1 = idle
Open circuit = tamper



Normally closed – SEOL
Short circuit = tamper
1K1 = idle
Open circuit = alarm



Normally open – DEOL
Short circuit = tamper
1K1 = alarm
3K3 = idle
Open circuit = tamper



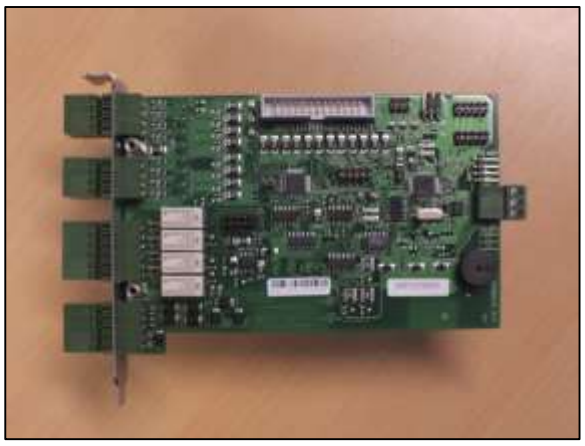
Normally closed – DEOL
Short circuit = tamper
1K1 = idle
3K3 = alarm
Open circuit = tamper
(Default setting)

9 Main and Extension I/O Cards Next Generation

9.1 Features

The Main I/O (MIO) and Extension I/O (EIO) Next Generation cards are internal I/O cards, to be fitted inside the ADPRO FastTrace 2/2E system. They are also called OTB (on-the-board) cards.

Main I/O Next Generation card:



Extension I/O Next Generation card:

These I/O cards offer:

- 8 tamper-protected inputs and 4 relay outputs (rated 14 VDC @ 1 A) on the Main I/O card
- 12 tamper-protected inputs and 4 relay outputs on the Extension I/O card
- GND for every input
- driver for PTZ cameras (half/full duplex RS-485) on the Main I/O card; you need to set 1 jumper to select 2- or 4-wire PTZ
- driver for audio module/VM22 audio switcher on the Main I/O card; with improved audio quality
- driver on the Main I/O card for front LED indicators of FastTrace 2/2E model
- auto-detected Main I/O cards on FastTrace 2/2E system

> ***Note***
>
> The Main I/O and Extension I/O cards of the FastTrace 2/2E are compatible with the V3100 HYBRID.

9.2 Possible Configurations

You can configure maximum 2 sets of I/O cards on the FastTrace 2/2E:

- Main I/O only
- Main I/O + Extension I/O
- 2 x Main I/O + 1 x Extension I/O
- 2 x Main I/O + 2 x Extension I/O

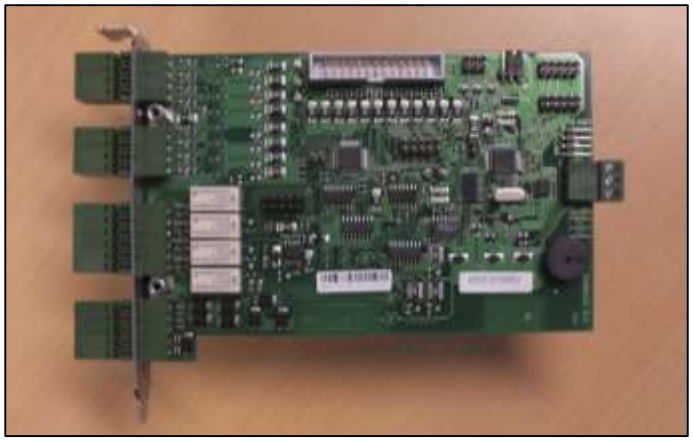
9.3 Ordering Information

Use these reference numbers to place your order with Xtralis:

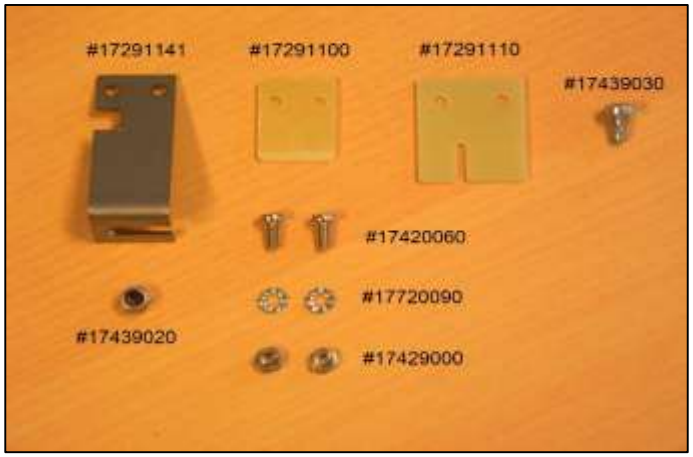
Item	Reference Number
Main I/O card plus mounting set	39544000
Extension I/O card plus mounting set	39544010

9.4 Material List

9.4.1 Main I/O Card with Mounting Set (#39544000)

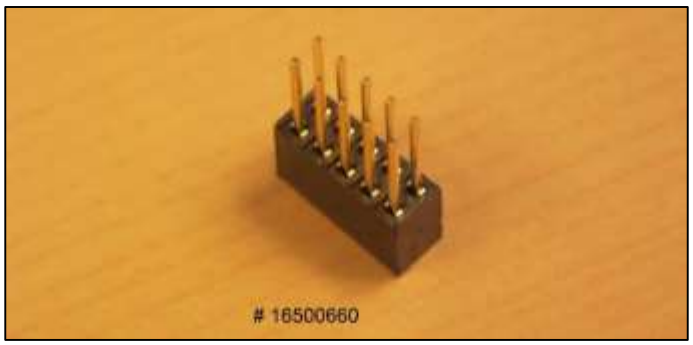


Part	Amount + Reference Number
Main I/O card (incl. mounting bracket, M3 screws, and hex spacers)	1 x #39544070 (1 x #17291161) (2 x #17439030) (2 x #17210070)



Part	Amount + Reference Number
L-profile	1 x #17291141
Locknut	1 x #17439020
Screw M2.5	2 x #17420060
Nut M2.5	2 x #17429000
Dented washer M2.5	2 x #17720090
Self-locking screw M3	1 x #17439030
PCI Inserter	1 x #17291100
PCI Express Inserter	1 x #17291110

Part	Amount + Reference Number
Flat cable (6 pins x 35 cm)	1 x #21760101
Flat cable (10 pins x 20 cm) for USB	1 x #16540260
Flat cable (10 pins x 30 cm) for audio	1 x #16540280
Reset cable	1 x #21760402

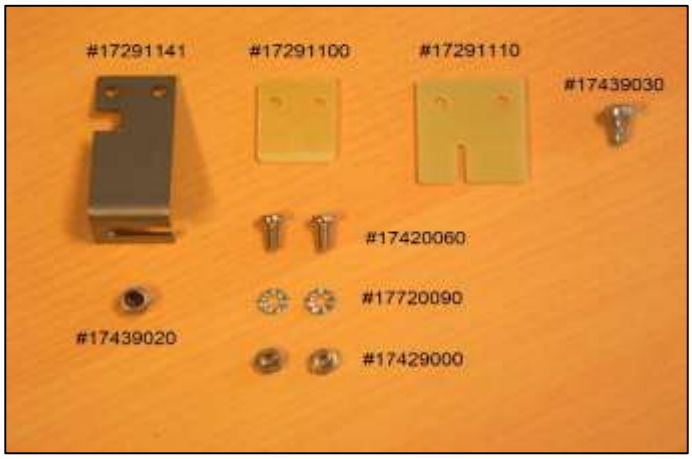


Part	Amount + Reference Number
Connector adapter for DG41TY and DH61BE motherboards	1 x #16500660
Connector adapter for PH10LU motherboard	1 x #16500665

DG41TY: place the adapter on the AUDIO connector.
DH61BE: place the adapter on the USB connector.
PH10LU: place the adapter on the USB connector.

9.4.2 Extension I/O Card with Mounting Set (#39544010)

Part	Amount + Reference Number
Extension I/O card (incl. mounting bracket, M3 screws, and hex spacers)	1 x #39544080 (1 x #17291161) (2 x #17439030) (2 x #17210070)
Flat cable (26 pins)	1 x #21760300



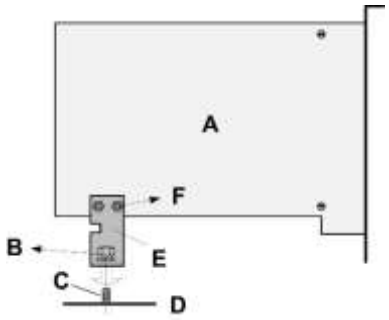
Part	Amount + Reference Number
L-profile	1 x #17291141
Locknut	1 x #17439020
Screw M2.5	2 x #17420060
Nut M2.5	2 x #17429000
Dented washer M2.5	2 x #17720090
Self-locking screw M3	1 x #17439030
PCI Inserter	1 x #17291100
PCI Express Inserter	1 x #17291110

9.5 Physical Position

Insert the first set of I/O cards in the two furthermost slots (= nearest to the power supply). Use the L-shaped brackets to fix the cards to the chassis. Insert the Main I/O card in the furthermost slot (= slot 6).

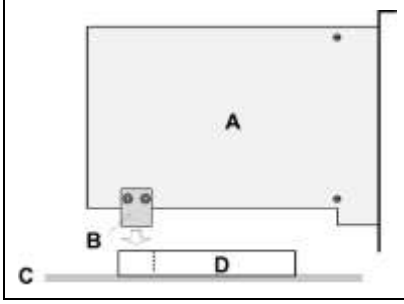
Insert the second set in the PCI or PCI Express slots on the motherboard using the included PCI or PCI Express Inserters. Depending on the type of motherboard, you need either a PCI or PCI Express Inserter.

Mounting on chassis:



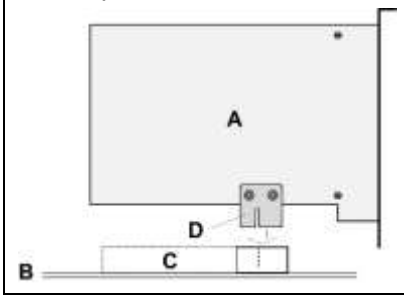
A	I/O card, bottom side
B	Locknut (#17439010)
C	M3 stud
D	Chassis
E	L-shaped metal bracket (#17291141) – on top side
F	Screw M2.5 (#17420060) Nut M2.5 (#17429000) Dented washer M2.5 (#17720090)

PCI connector:



A	I/O card, bottom side
B	PCI inserter (#17291100)
C	Motherboard
D	PCI connector

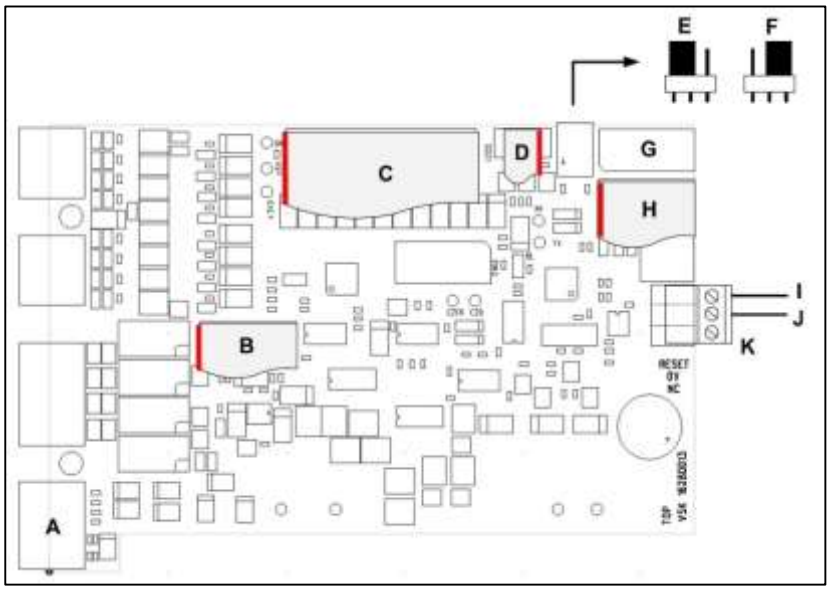
PCI Express connector:



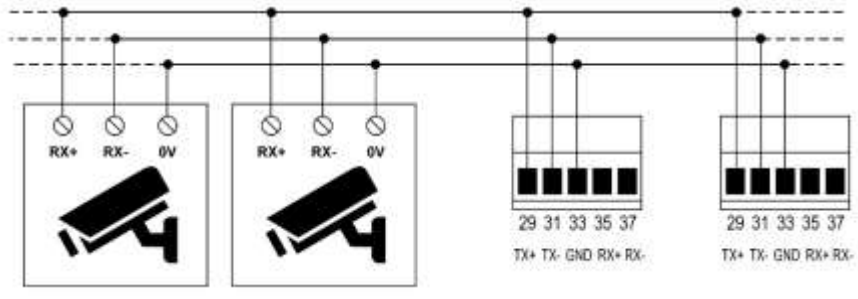
A	I/O card, bottom side
B	Motherboard
C	PCI Express connector
D	PCI Express inserter (#17291110)

9.6 Settings on the Main I/O Card

If you are connecting PTZ cameras from the same RS-485 bus to multiple FastTrace 2 servers, set the RS-485 PTZ jumper on the Main I/O card to the 2-wire (PTZ) position.
RS-485 cable length: max. 1200 m.



A	PTZ and audio (VM22)	**G**	USB port; to second Main I/O card
B	To AUDIO on motherboard (#16540280)	**H**	To nearest USB port on motherboard (#16540260) • On 1st Main I/O: addressed as /dev/ttyU6. • On 2nd Main I/O: addressed as /dev/ttyU8.
C	To Extension I/O card (#21760300)	**I**	Reset cable, grey wire
D	To front LEDs (#21760101)	**J**	Reset cable, white wire
E	RS-485 PTZ jumper: 2-wire setting	**K**	Reset signal from motherboard (#2176040*)
F	RS-485 PTZ jumper: 4-wire setting (default setting)		



PTZ cameras

Main I/O cards Next Generation

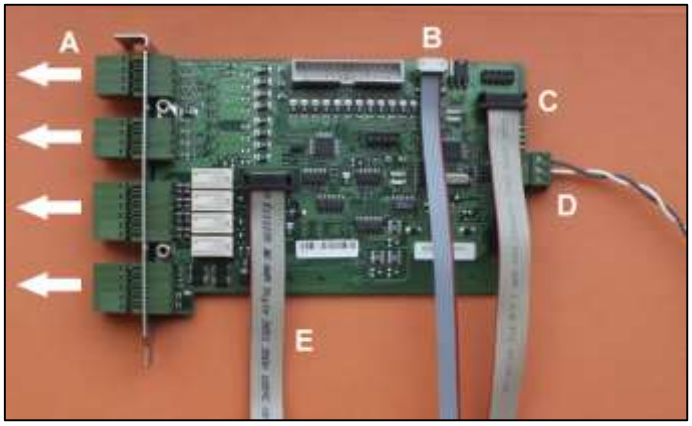
9.7 Installation

To install the Main I/O card, proceed as follows:

1. Switch off the power supply, and remove the lid from the server.
2. Remove any superfluous blind brackets.

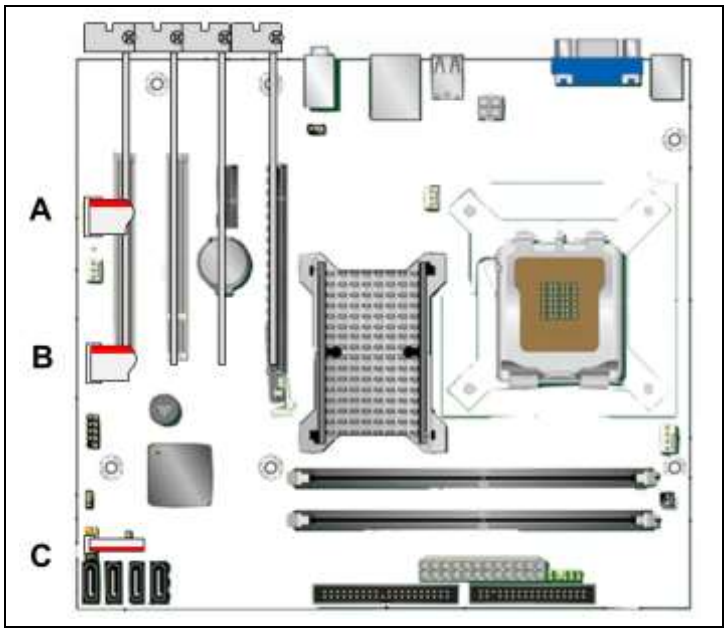
3. Remove the two cables that connect the LED board on the front to the motherboard. The LEDs will be powered from the Main I/O card (of the 1st set).

4. Remove the female connectors (A, see figure below) from the Main I/O card before installing.
5. Before inserting the Main I/O card into the motherboard, connect all necessary cables to the card. See the table below for an overview of cable connections.

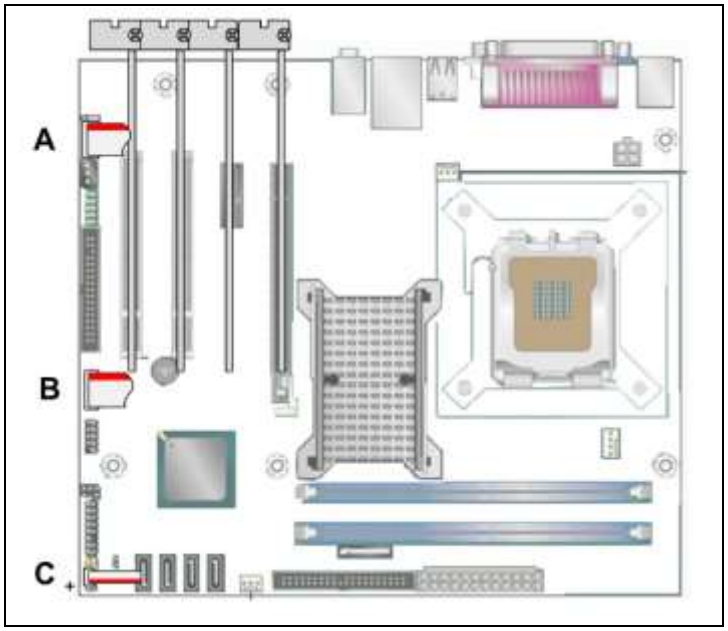


	From	To	Cable
B	MIO 1	Front LED board	#21760101
C	MIO 1	Motherboard USB (Intel motherboard: place adapter #16500660 on the USB connector; MiTAC motherboard: place adapter #16500665 on the USB connector)	#16540260
D	MIO 1	Motherboard reset. For more information, see *Reset Signal Details* on page 65.	#21760402
E	MIO 1	Motherboard audio	#16540280

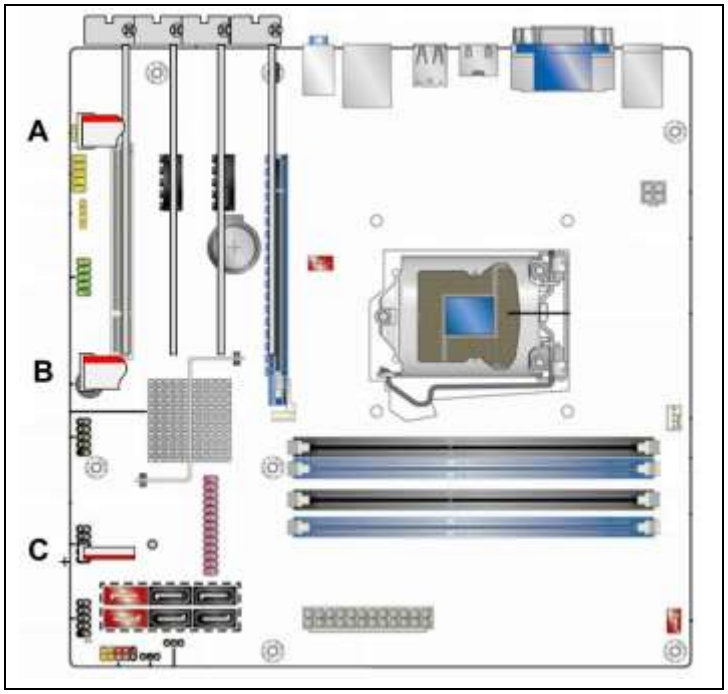
6. Insert the I/O card in the appropriate slot. For more information, see *Physical Position* on page 60.
7. Connect the cables from the I/O card to the motherboard as indicated.



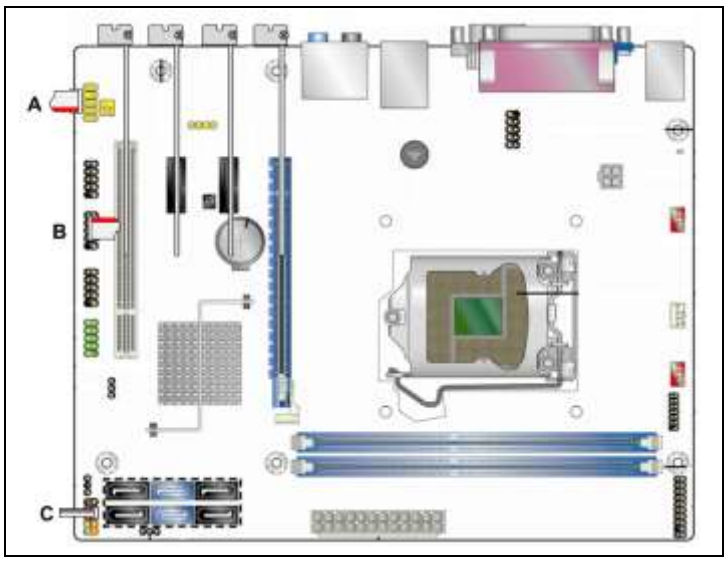
DG31PR motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card)
C	Reset (to MIO card)



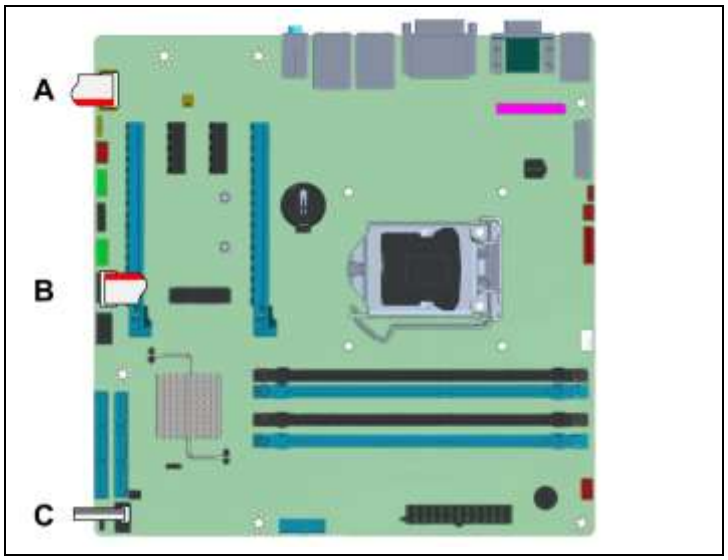
DG41TY motherboard	
A	AUDIO (to MIO card), use adapter #16500660
B	USB (to MIO card)
C	Reset (to MIO card)



DH55TC motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card)
C	Reset (to MIO card)

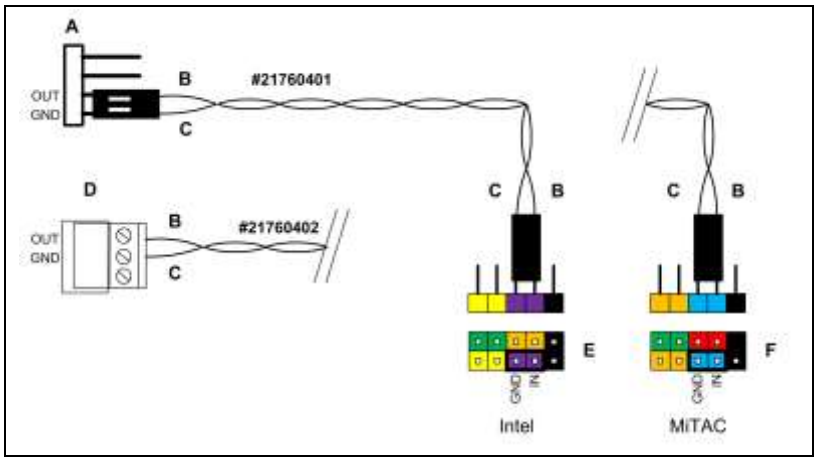


DH61BE motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card), use adapter #16500660
C	Reset (to MIO card)



PH10LU motherboard	
A	AUDIO (to MIO card)
B	USB (to MIO card), use adapter #16500665
C	Reset (to MIO card)

9.8 Reset Signal Details



A	Connector – Main I/O and Main I/O Next Generation
B	Grey wire
C	White wire
D	Connector – Main I/O Next Generation only
E	Intel motherboard
F	MiTAC motherboard

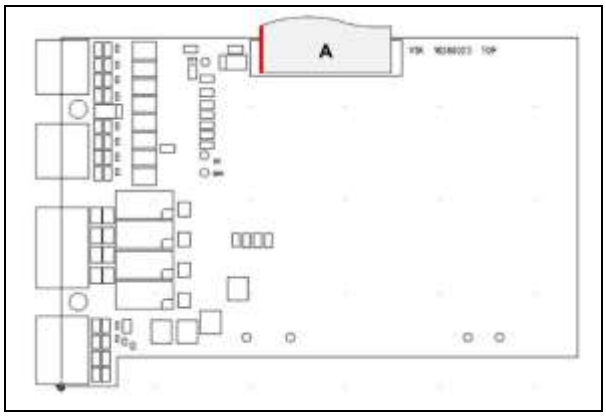
The Main I/O Next Generation card has two connectors for the reset cable: a pin connector (A) and a screw terminal (D). Depending on the plug that is available on the reset cable, you can connect it to either connector on the new Main I/O cards.
On older Main I/O cards, only the pin connector is available.

Note

Check the polarity! If you reverse the connection, the motherboard receives a permanent reset signal.

9.9 Adding an Extension I/O Card

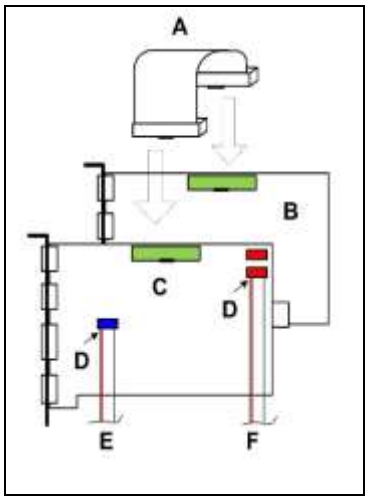
9.9.1 Settings on the Extension I/O Card



A	From Main I/O card (#21760300)

No settings are required on the Extension I/O card.

9.9.2 Installation

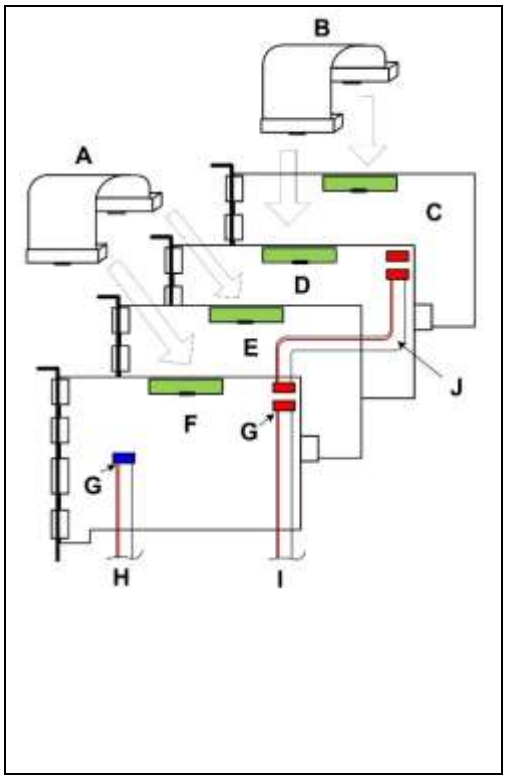


A	Flat cable (#21760300)
B	Extension I/O card
C	Main I/O card
D	Red conductor = pin 1
E	To motherboard AUDIO connector
F	To motherboard USB connector

To install an Extension I/O card, proceed as follows:

1. Insert the extension card into an appropriate slot on the motherboard. For more information, see *Physical Position* on page 60.
2. Connect the Main I/O card to the Extension I/O card using flat cable #21760300 (A).

9.10 Adding a Second Set of I/O Cards



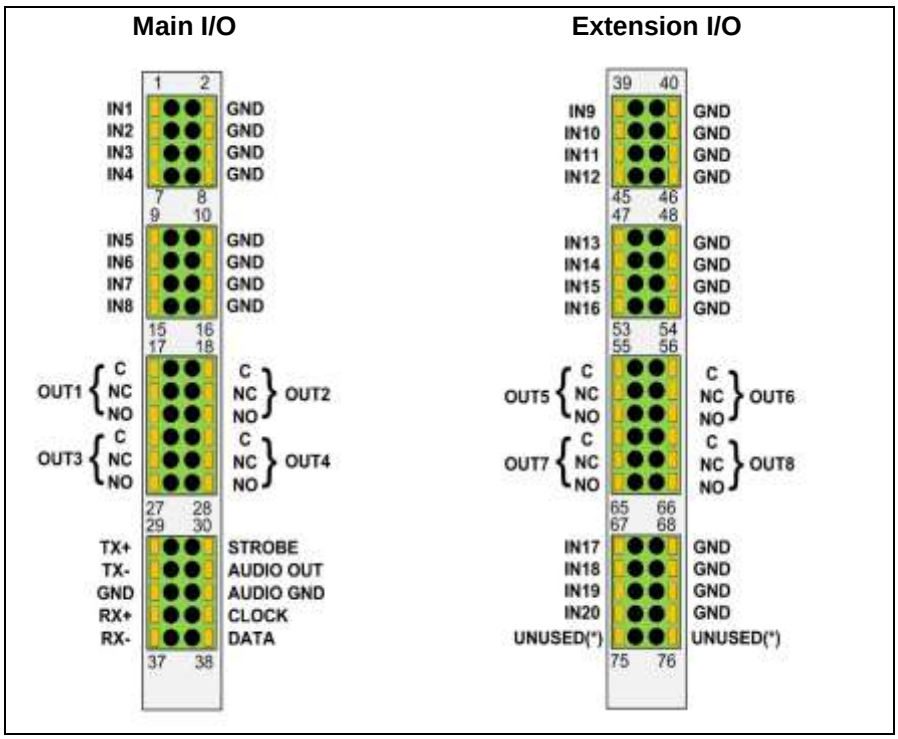
A	Flat cable (#21760300)
B	Flat cable (#21760300)
C	EIO 2
D	MIO 2
E	EIO 1
F	MIO 1
G	Red conductor = pin 1
H	To motherboard AUDIO connector
I	To motherboard USB connector (MIO 1 only)
J	Flat cable (#16540260)

To insert a second set of I/O cards, proceed as follows:

1. Insert all cards into appropriate slots (see *Physical Position* on page 60).
2. Connect MIO 1 to EIO 1 using flat cable #21760300 (A).
3. Connect MIO 2 to EIO 2 using a flat cable #21760300 (B).
4. Connect MIO 1 to MIO 2 using a flat cable #16540260 (J).

9.11 Connection of Inputs/Outputs

9.11.1 Overview of Inputs and Outputs



(*) 75 and 76 are interconnected.

Depending on the type, the Next Generation cards can be equipped with one of two different spring insertion connectors: Dinkle (standard) or Phoenix. For both types you need a 2 mm slotted screwdriver.

Warning!

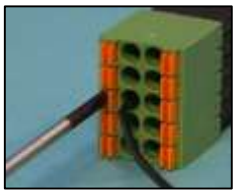
Although the pictures below show only the connector, it is strongly recommended to connect the wires with the connectors plugged into the card. Wiring a handheld connector may cause injuries.

9.11.2 Connecting Inputs/Outputs

Wiring to Dinkle and Phoenix connectors is identical; except that the position of tabs and holes is swapped. The picture in the procedure below shows a Phoenix connector.

To connect inputs/outputs, proceed as follows:

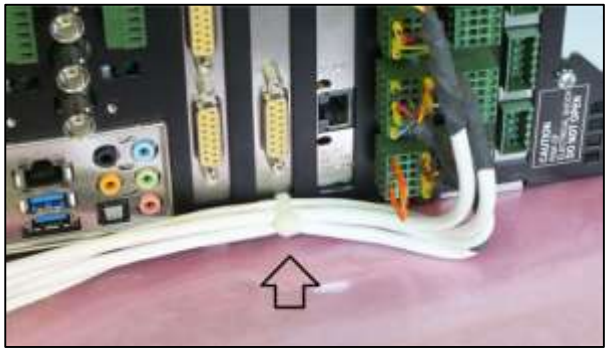
1. Push the slotted tab firmly inwards with the screwdriver.
2. Insert the stripped wire (6–7 mm) into the corresponding round hole as deeply as possible.
3. Release the tab and pull the wire to check if it is properly fitted.

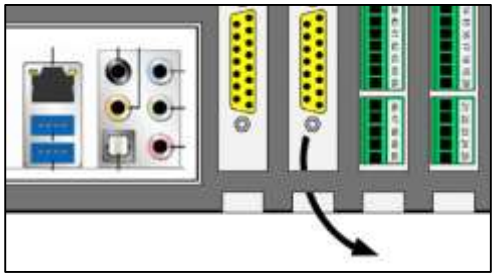


Wire gauge:
Solid and stranded: 16–24 AWG
(diam. 1.3–0.5 mm)

9.11.3 Cable Strain Relief

After connecting all the wires, use a tie-wrap to attach the cables to the chassis. Run the tie-wrap through one of the extension card openings in the chassis as shown below. The tie-wrap serves as a strain relief and makes sure that the wiring stays in place when handling the FastTrace 2 unit.



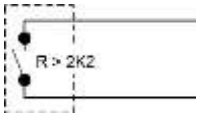


9.12 Configuring the Internal I/O Cards

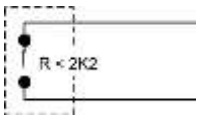
The FastTrace 2 server automatically detects all connected MIO and EIO cards. To configure the inputs and outputs, see the *XOa Client Software User Manual*.

9.13 Input Circuits

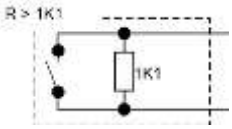
Use the ADPRO XOa client to configure the inputs as NEOL, SEOL, or DEOL.



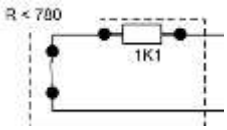
Normally open – NEOL
Short circuit = alarm
Open circuit = idle



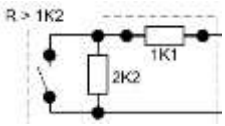
Normally closed – NEOL
Short circuit = idle
Open circuit = alarm



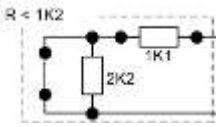
Normally open – SEOL
Short circuit = alarm
1K1 = idle
Open circuit = tamper



Normally closed – SEOL
Short circuit = tamper
1K1 = idle
Open circuit = alarm



Normally open – DEOL
Short circuit = tamper
1K1 = alarm
3K3 = idle
Open circuit = tamper



Normally closed – DEOL
Short circuit = tamper
1K1 = idle
3K3 = alarm
Open circuit = tamper
(Default setting)

10 Required Encoder (A/V) Card

You use different video cards (encoder cards) with different motherboards in the FastTrace 2 video system:

- Use DS40xx-HCI encoder cards with the Intel DG31PR and Intel DG41TY motherboards.
- Use DS42xx-HFVI-E encoder cards with the Intel DH55TC, Intel DH61BE, and MiTAC PH10LU motherboards.

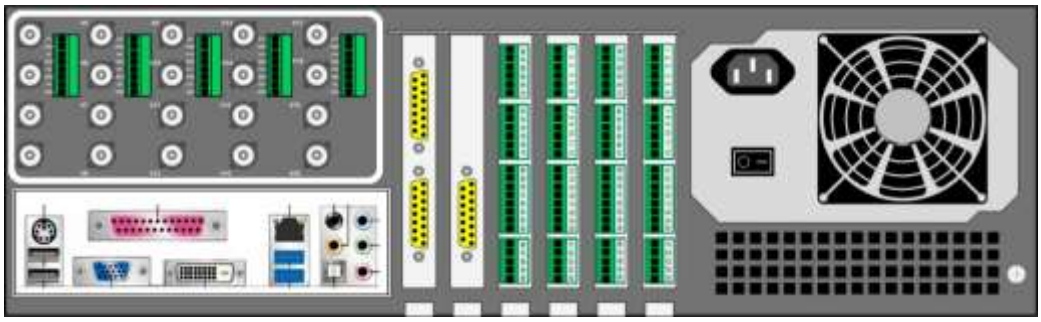
Do not mix different cards within the same video system.

Caution!

The XOa 3 firmware does not support DS40xx-HCI encoder cards.

10.1 Number of Cameras

Depending on the installed encoder card(s), you have 4, 8, 12, 16, or 20 analogue A/V inputs. You can connect analogue cameras to the rear of the FastTrace 2 video system using BNC RG59 or RG11 cables.



Each analogue camera needs a separate BNC input.

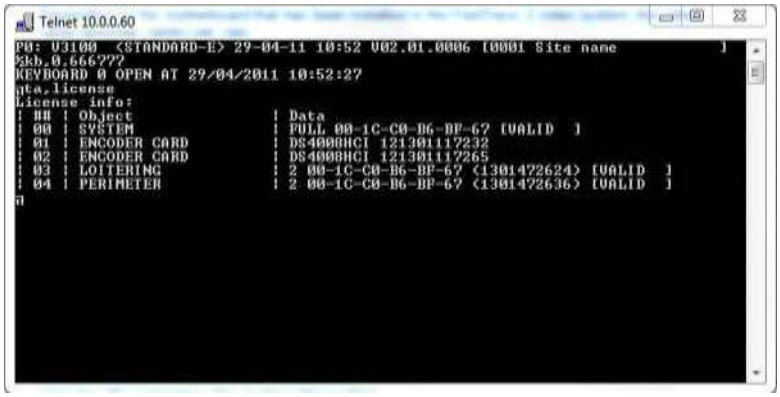
10.2 Technical Specifications of Analogue Cameras

video standard	PAL or NTSC
video compression	H.264
video resolution	PAL: • QCIF (176 x 144) • CIF (352 x 288) • 2CIF (704 x 288) • DCIF (528 x 384) (not available with DS42xx A/V cards) • 4CIF (704 x 576)
	NTSC: • QSIF (176 x 120) • SIF (352 x 240) • 2SIF (704 x 240) • DSIF (528 x 320) (not available with DS42xx A/V cards) • 4SIF (704 x 480)
frames per second	PAL: • CIF, 2CIF, DCIF: 25 fps / camera • 4CIF: 15 fps / camera (25 fps with DS42xx A/V cards)
	NTSC: • QSIF, SIF, 2SIF, DSIF: 30 fps / camera • 4SIF: 15 fps / camera (25 fps with DS42xx A/V cards)
audio	1 input per analogue camera, with screw connectors input level: 2.0 Vp-p; 1000 ohm

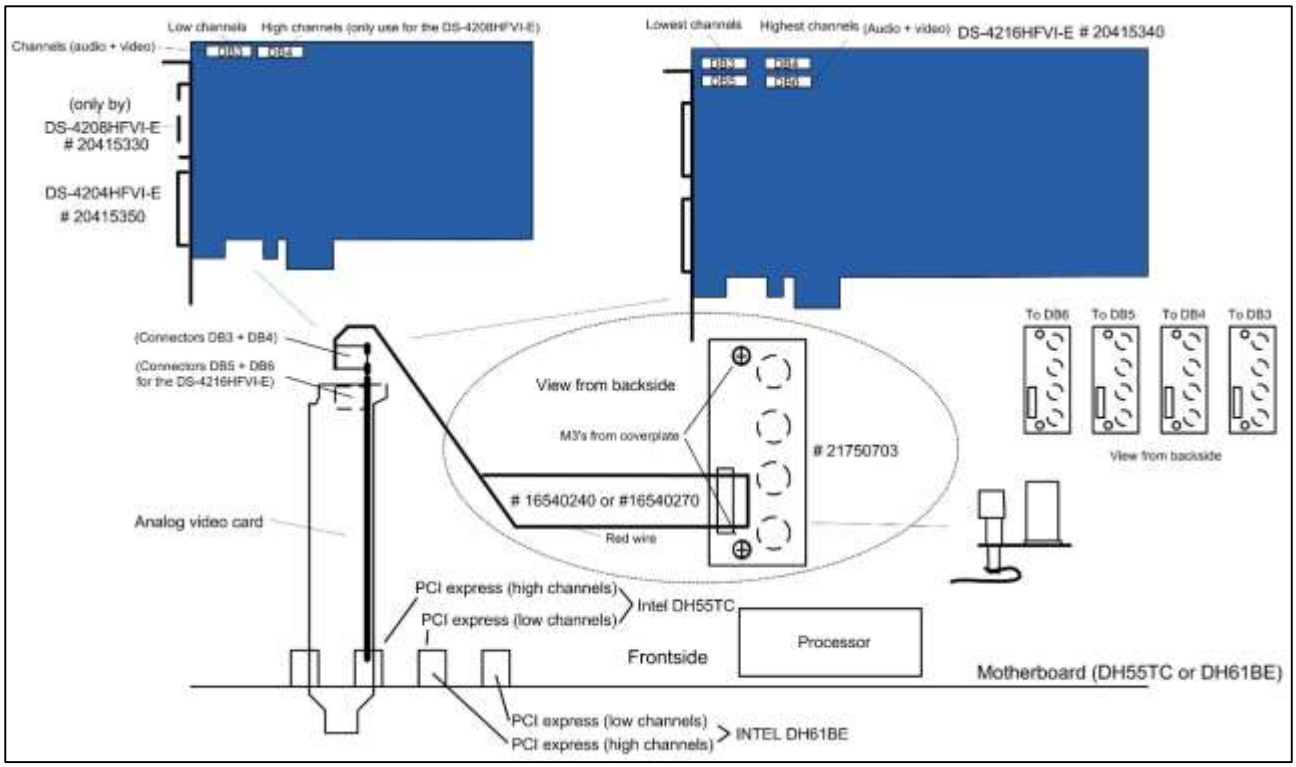
audio compression	OggVorbis Codec 16 kbps (DS40xx cards) OggVorbis Codec G711 (DS42xx cards)
bandwidth	Compression, fps, and quality are remotely adjustable. You can specify a bandwidth limit in the XOa client software.
bandwidth consumption	6 fps CIF/SIF: 70 kbps 12 fps 4CIF/SIF: 400 kbps in optimal quality
PTZ	Several protocols available For a detailed list, see the *XOa Client Software User Manual*. For more information on the possible PTZ connections, see *PTZ Cameras* on page 80.
management	• Internet Explorer (installs the XOa client software) (IMPORTANT: turn off Protected Mode) • VSKWin software • M3000 software • VideoCentral Platinum software • third-party software (e.g. EMS by HeiTel)

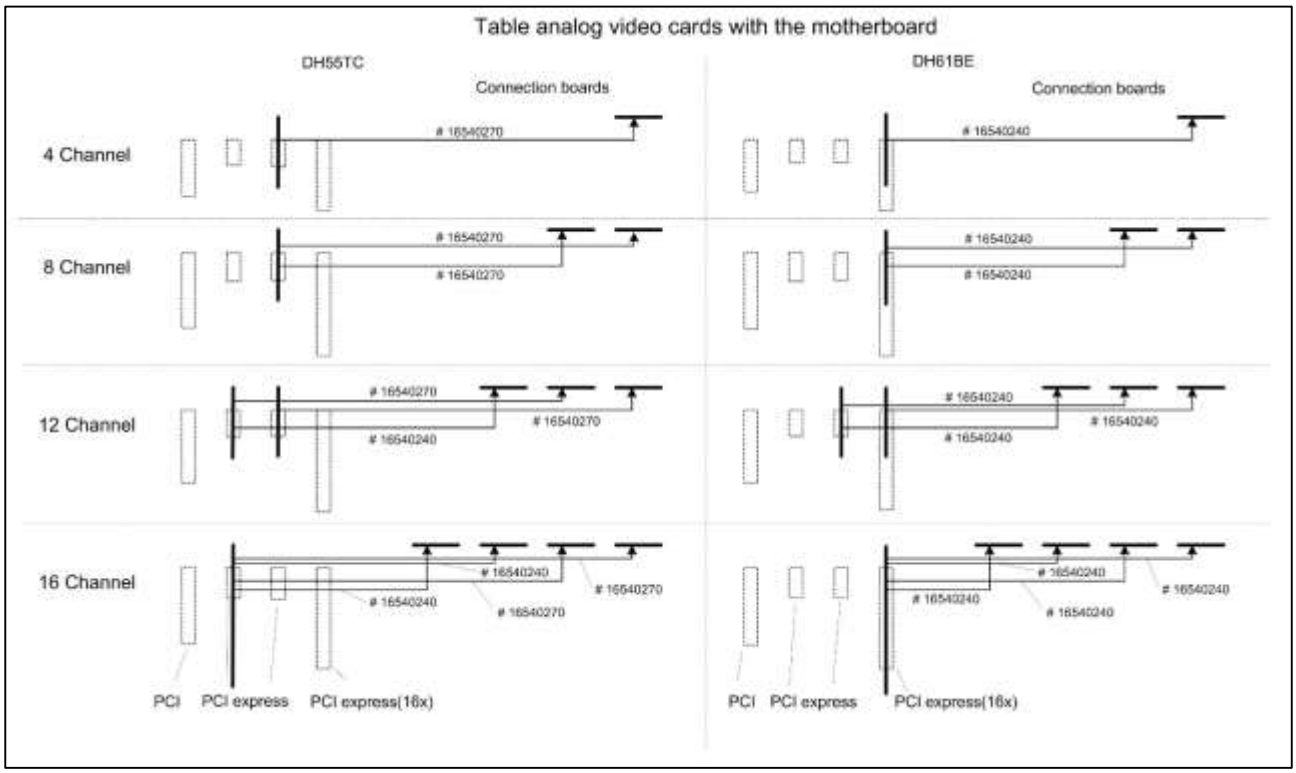
10.3 Replacing a Video Card

First check your license (either via the **Status** page in the XOa client software, or via a Telnet connection using the command **ta,license**). If no license information is listed, your license may have been deleted (by accident). Contact your dealer for a new license.
(For more information, see *System License* on page 13).


Telnet 10.0.0.60
P0: V3100 <STANDARD-E> 29-04-11 10:52 V02.01.0006 [0001 Site name]
%kb,0.666777
KEYBOARD 0 OPEN AT 29/04/2011 10:52:27
ta,license
License info:
| ## | Object | Data
| 00 | SYSTEM | FULL 00-1C-C0-B6-BF-67 [VALID]
| 01 | ENCODER CARD | DS4000HCI 121301117232
| 02 | ENCODER CARD | DS4000HCI 121301117265
| 03 | LOITERING | 2 00-1C-C0-B6-BF-67 (1301472624) [VALID]
| 04 | PERIMETER | 2 00-1C-C0-B6-BF-67 (1301472636) [VALID]

Trace the faulty video card by checking live images of the connected cameras in the XOa client. Switch off the power supply and remove the faulty video card. Insert the new video card in the slot where you removed the old one.





It is recommended to return the faulty video card to your reseller.

Switch on the power supply and reboot the video system. The replacement part will include a new license. Upload the received license file to the server. For more information on uploading files to the video system, see the *XOa Client Software User Manual*.

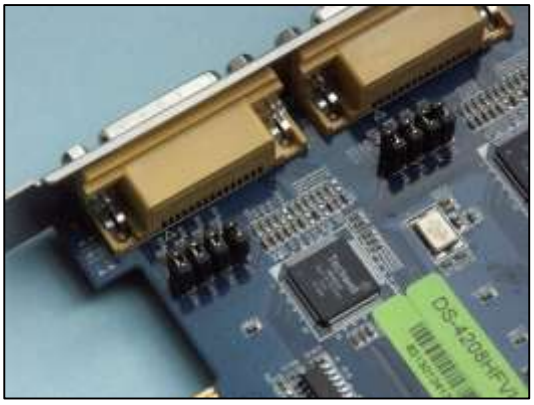
10.4 Adding a Video Card

Switch off the power supply. Open the casing and insert the new video card (in a free slot). Close the casing and switch on the power supply. The new video card will include a new license on delivery. Upload the received license file to the server.
For more information on uploading files to the server, see the *XOa Client Software User Manual*.

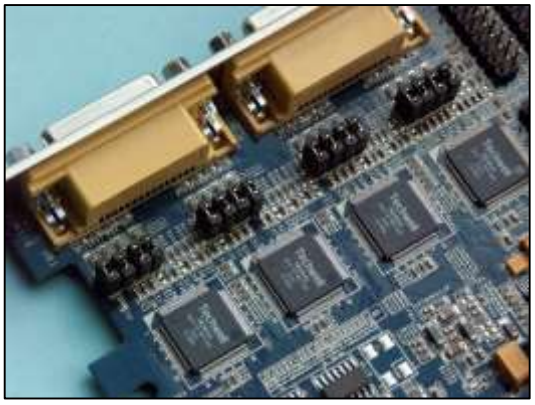
10.5 Video Input Termination (75 Ohm/High Impedance)

This is only available on the latest version of the 8 or 16 channel video cards.

Jumpers JP1–JP8/16 determine whether the corresponding video input is terminated with 75 ohm (if jumper is placed) or not (if jumper is removed).



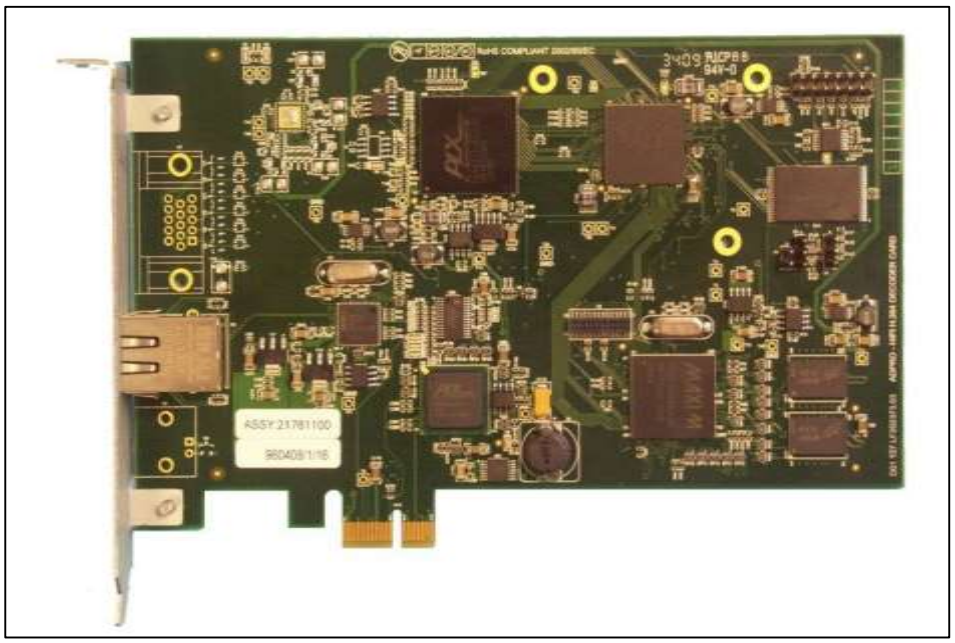
8-channel A/V card



16-channel A/V card

11 HIPI Card for IP Cameras

The HIPI card offers an isolated LAN network (10/100/1000 Mbps on RJ45 connector) to connect IP cameras.

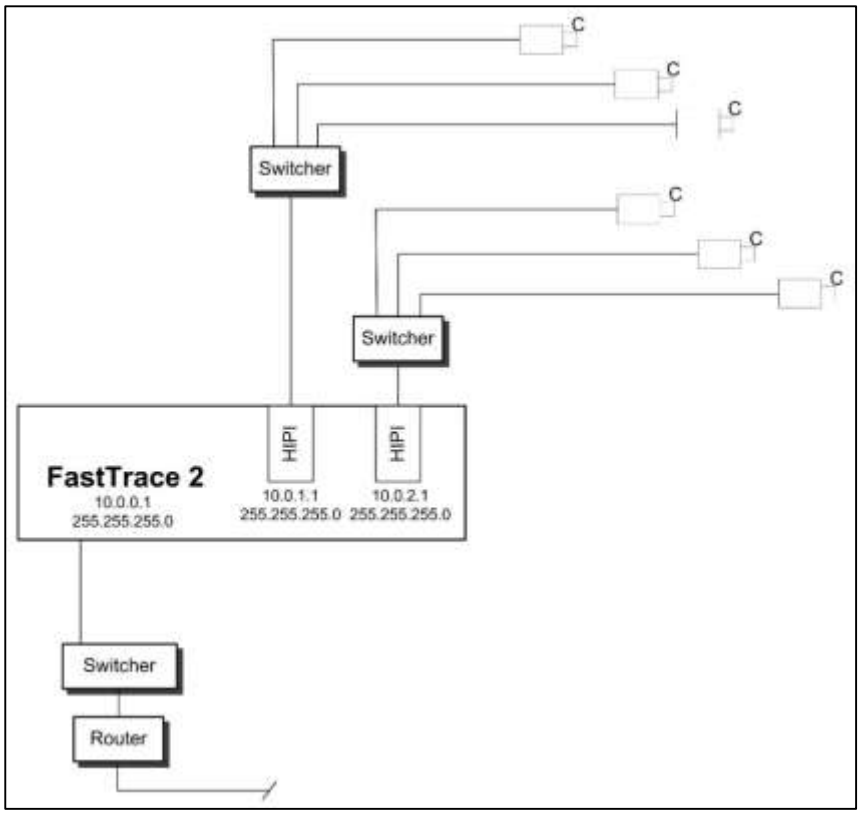


Note

The HIPI card can also function as Ethernet card from version 2.9 onwards. The HIPI card is no longer used for new FastTrace 2 units. It is not compatible with the MiTAC PH10LU motherboard.

11.1 Ethernet Settings

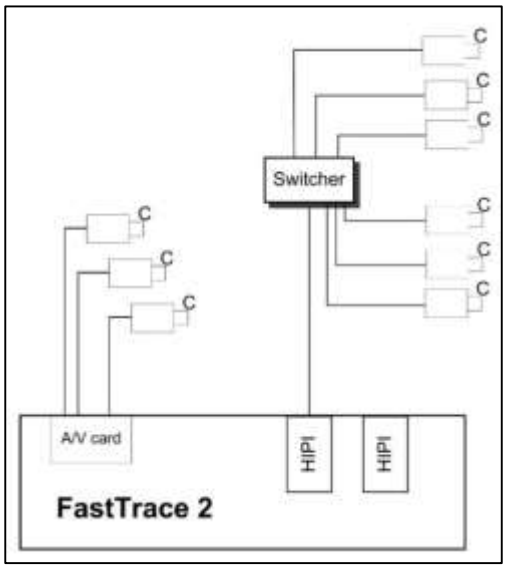
The Ethernet connection of your FastTrace 2 server and the Ethernet connections of the installed HIPI card(s) must be set on different IP ranges! IP cameras can be connected on either HIPI card, as shown in the illustration below, with a maximum of 8 cameras per HIPI card. Yet, if you have installed two HIPI cards you can connect up to 16 IP cameras to the same switch/HIPI card.



Note

The HIPI Ethernet interfaces use ETH1 and/or ETH2, not ETH0.

In case of 2 HIPI cards with IP only, there is no restriction in which camera is connected to which port. A 16-camera network can be connected to a single port.



The HIPI card is automatically detected by the FastTrace 2 video system. Each HIPI card must be configured with a different IP address and a subnet mask. As a consequence, 3 IP ranges are possible on a FastTrace 2 configuration:

- IP range of the FastTrace 2 video system
- IP range of the first HIPI card
- IP range of the second HIPI card

All IP cameras connected to the HIPI card (by means of a switch) must be set in the same IP range as the HIPI card.

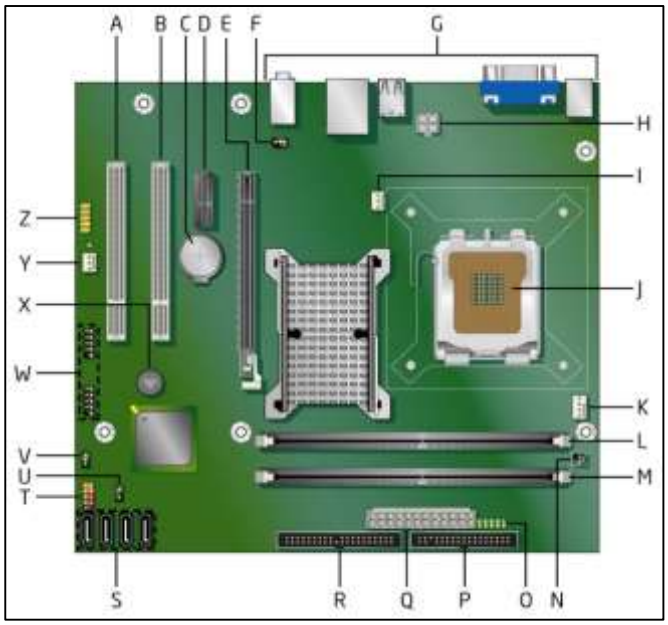
11.2 Adding a HIPI Card

Use these reference numbers when ordering your HIPI card with Xtralis:

Extension Board	Reference Number
HIPI card: card only	39544300
Hybrid HIPI card: card + mounting set	39544320

11.2.1 Placement on the Intel DG31PR Motherboard

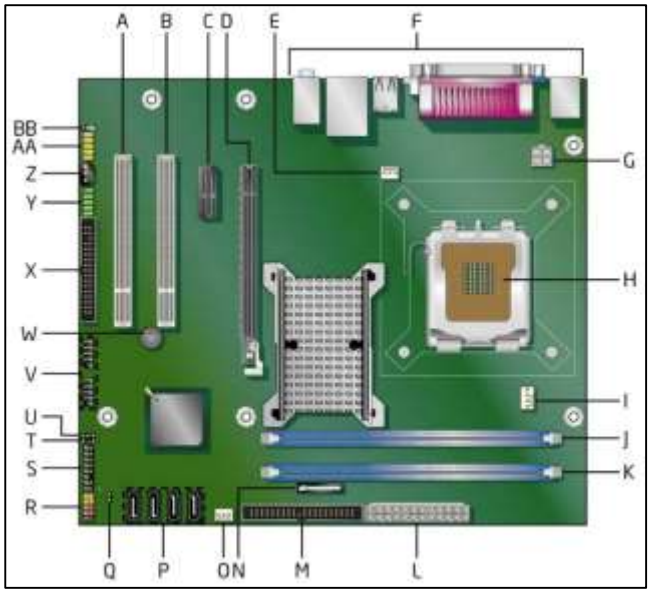
Insert the first HIPI card in PCI Express slot E. Insert the second HIPI card in PCI Express slot D.



The card in slot E is assigned as ETH1 in the system. For more information, see the manual of the motherboard.

11.2.2 Placement on the Intel DG41TY Motherboard

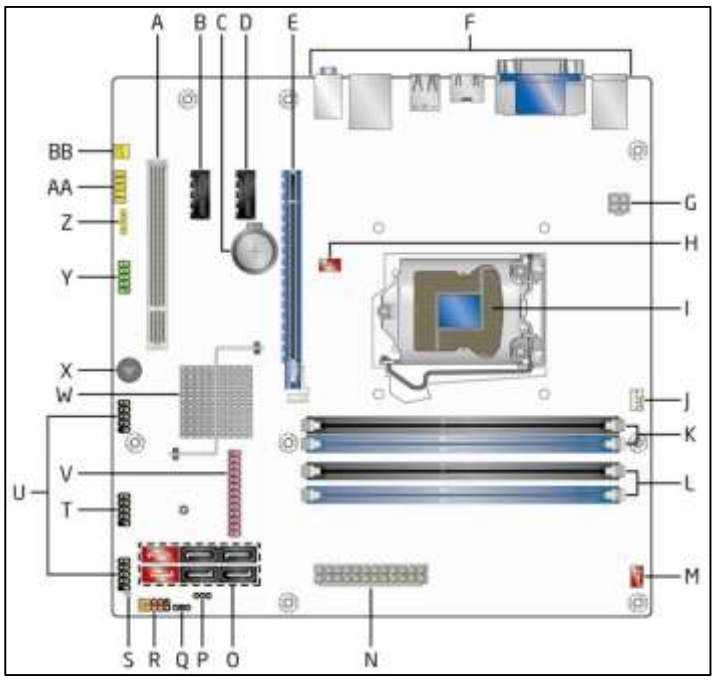
Insert the first HIPI card in PCI Express slot D. Insert the second HIPI card in PCI Express slot C.



The card in slot D is assigned as ETH1 in the system. For more information, see the manual of the motherboard.

11.2.3 Placement on the Intel DH55TC Motherboard

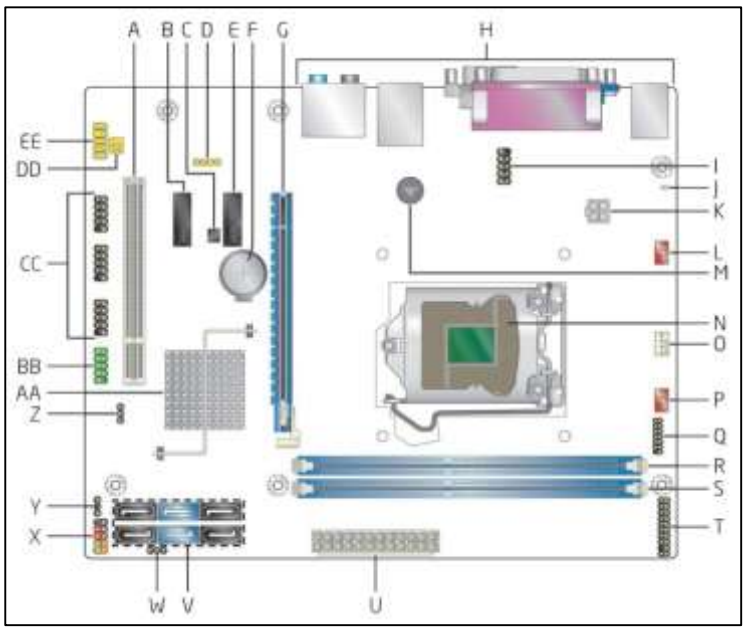
Insert the first HIPI card in PCI Express slot E. Insert the second HIPI card in PCI Express slot D.



The card in slot E is assigned as ETH1 in the system. For more information, see the manual of the motherboard.

11.2.4 Placement on the Intel DH61BE Motherboard

Insert the first HIPI card in PCI Express slot E. Insert the second HIPI card in PCI Express slot B.



The card in slot E is assigned as ETH1 in the system. For more information, see the manual of the motherboard.

11.3 Configuring the HIPI Card

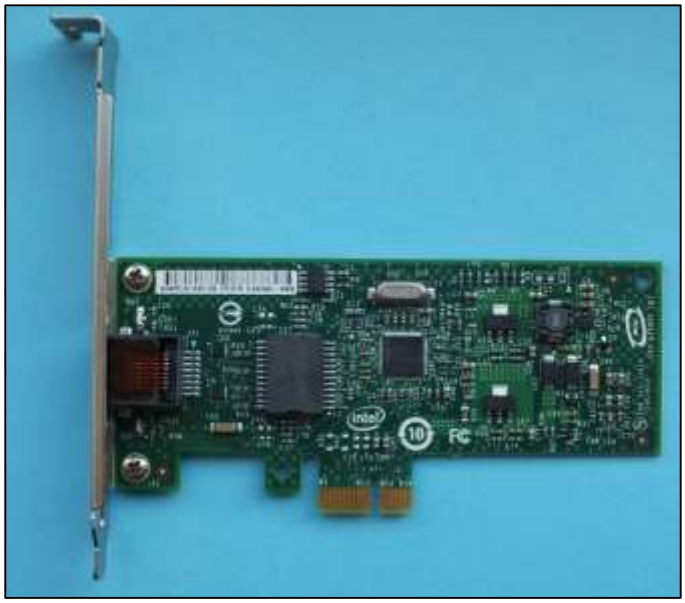
For the configuration of the HIPI card, see the *XOa Client Software User Manual*.

12 Ethernet Card

12.1 Installation

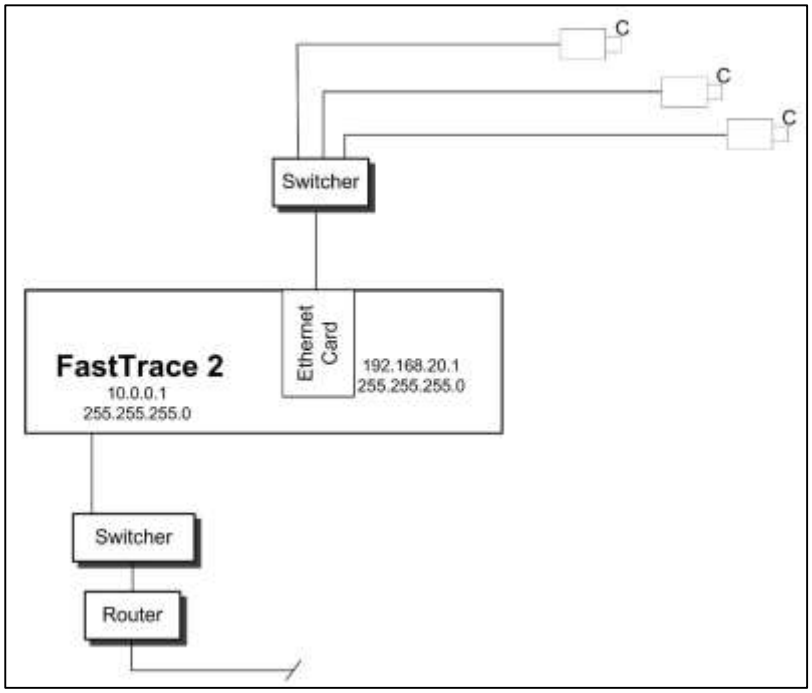
FastTrace 2E units with Intel motherboards are standard equipped with an Ethernet card. Units with a MiTAC motherboard do not have an Ethernet card; the motherboard contains the necessary LAN connector.

If you want to use an analogue-only system (with 2 video encoder cards) and you want to insert 2 I/O cards sets (2 Main I/O cards and 2 Extension I/O cards), you need to take out the Ethernet card and replace it with an I/O card. If you have a slot available (with only 1 video encoder card), you can use the available slot for the Extension I/O 2 card.



12.2 Ethernet Settings

You must set the Ethernet connection of your FastTrace 2 video system and the Ethernet connections of the installed Ethernet card to different IP ranges. For more information, see the *XOa Client Software User Manual*.



13 DTC Card

The DTC card offers down-the-coax PTZ control for analogue cameras. The DTC card is built in at the factory; you cannot order it separately. It is inserted on the back of the audio/video connection board.

The DTC card requires software. You can retrieve the current software version of the DTC card in the XOa client software. For more information, see the *XOa Client Software User Manual*.

Note

You can insert DTC boards in FastTrace 2E units only with maximum 16 analogue channels. If you want to install a DTC card in a device with 20 analogue channels, then channels 17-20 will be removed.

14 PTZ Cameras

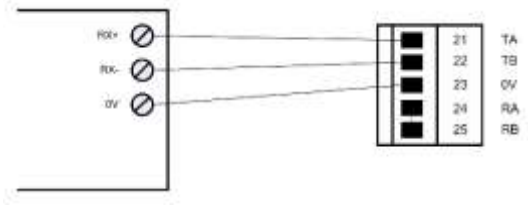
You can connect PTZ (Pan-Tilt-Zoom) cameras in one of the following ways for PTZ control:

- on the Main I/O card
- via a USB converter
- via the coaxial interface (DTC card)

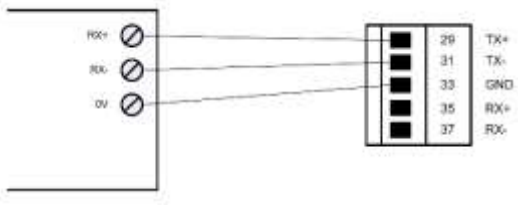
Each method is described in detail below.

14.1 Serial PTZ on MIO Card

Connect the PTZ camera to the MIO card as shown below:



PTZ camera Main I/O card



PTZ camera Main I/O card Next Generation

When using 5 wires to connect your PTZ camera to the Main I/O card, you also have a TX+ and TX– terminal on the PTZ camera:

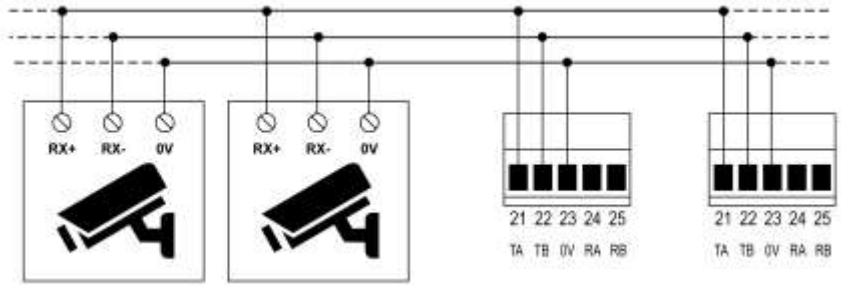
- Connect the TX+ terminal to the RA terminal (number 24) of the Main I/O card, or the RX+ terminal (number 35) on the MIO Next Generation card.
- Connect the TX– terminal to the RB terminal (number 25) on the Main I/O card, or the RX– terminal (number 37) on the MIO Next Generation card.

Note

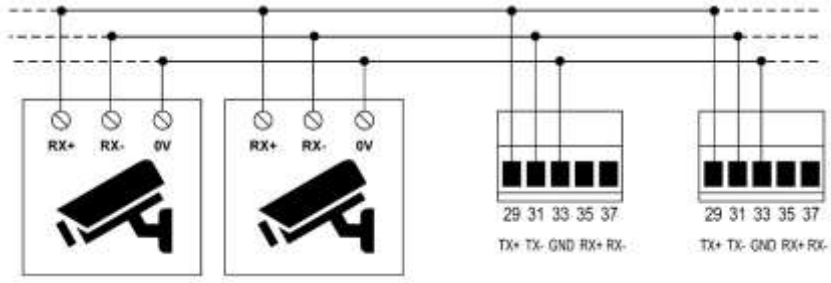
It is recommended to terminate the last (= the longest distance from the FastTrace 2 unit) PTZ camera with a 120 ohm resistor. RS-485 cable length: max. 1200 m.

Note

If you are connecting PTZ cameras from the same RS-485 bus to multiple FastTrace 2 servers, set the RS-485 PTZ jumper on the Main I/O card to the 2-wire (PTZ) position.
RS-485 cable length: max. 1200 m.



PTZ cameras Main I/O cards



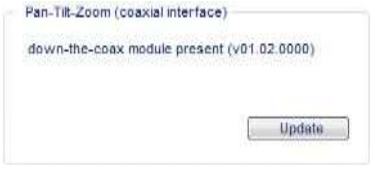
PTZ cameras

Main I/O cards Next Generation

14.2 PTZ via DTC

Some PTZ cameras can send the PTZ signal through the coax cable. If you want to use this, you must have your FastTrace 2 unit equipped with a DTC card. The DTC card is built in at the factory; you cannot order it separately.

Open the PTZ window via **System > Connections > Serial Ports / PTZ**. Check if the DTC card is present.



The DTC card supports the following PTZ protocols:

- Down-the-Coax (Pelco Ext.)
- Down-the-Coax (Baxall Std.)
- Down-the-Coax (Baxall Alt.)
- Down-the-Coax (BBV coax)

14.3 PTZ via USB Converters

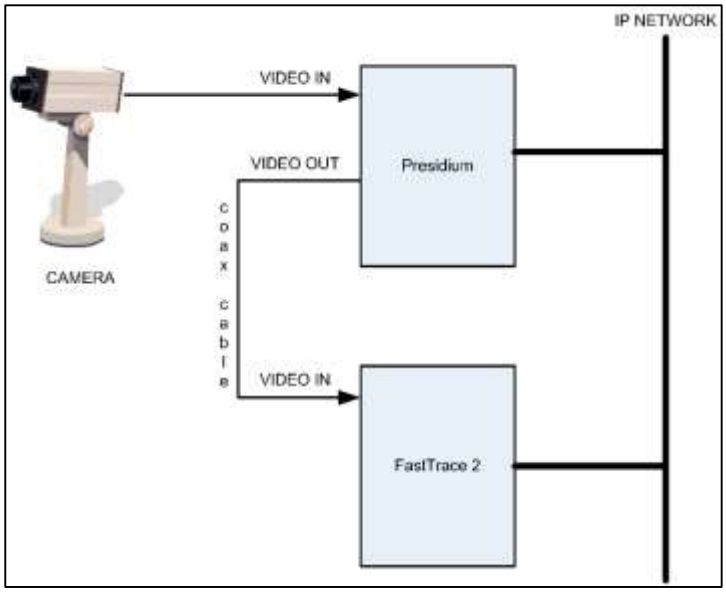
Device	Reference Number	Pin Assignment
USB to RS-485 converter 	20415490	RS-485 pin assignment (DB9 male connector) 1 = 485– 2 = 485+ 5 = GND
USB to RS-232 converter RS-232 is only used on some PTZ cameras (such as the Philips G3 Autodome camera). Limit the cable length to 50 ft (± 15 m). If more than 50 ft (15 m), keep the cable capacitance below 2500 pF. (pF = picofarad)	20415510	RS-232 pin assignment (DB9 male connector) 1 = Received Line Signal Detect 2 = Received Data 3 = Transmitted Data 4 = DTE Ready 5 = Signal Ground 6 = DCE Ready 7 = Request to Send 8 = Clear to Send 9 = DCE Ready

Note

You need to reboot the server after connecting the converter.

15 Presidium

You can associate video outputs from a Presidium with FastTrace 2 analogue inputs. Use coax cables to connect the video outputs of the Presidium system to the video inputs of the FastTrace 2 video system for further analysis and recording. It is then possible to transmit alarms from the Presidium to the FastTrace 2 server over the IP network.



See also the *XOa Client Software User Manual*.

16 Modems

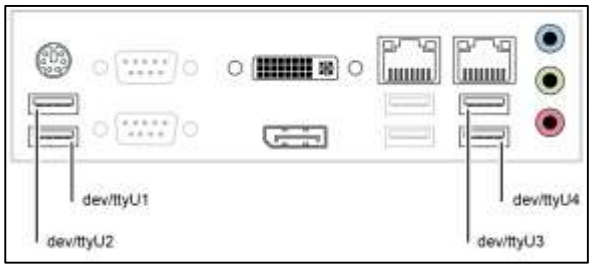
You can connect one modem to your server.

Normally, you connect a classic PSTN (ISDN) modem with serial port to the server by means of the USB to RS-232 converter. This USB to RS-232 converter needs a specific FTDI chip.

The Stollman TA+USBA is the only ISDN modem with USB interface that is supported on the FastTrace 2 unit (without having to use the converter).

Connect the modem to the USB input 1 /dev/ttyU1 on the server (rear connections).

Consult the specifications of the motherboard in your unit to know which USB input to use. The example below is for the MiTAC PH10LU motherboard.



Restart the XOa client software before configuring the modem. For more information, see the *XOa Client Software User Manual*.

17 Audio

Not only video images can be used in the **Live Video** screen, also audio – both in and out – is possible.

17.1 Audio IN

17.1.1 Setup

For cameras with an audio input, you can choose to record audio and listen to audio in the live view.

Note

If the connection bandwidth is low, it is recommended to disable live audio streaming.
Audio IN is unbalanced audio.
Changing the audio settings requires a system restart.

To set up audio for the cameras, see the *XOa Client Software User Manual*.

17.1.2 Recommended Microphones

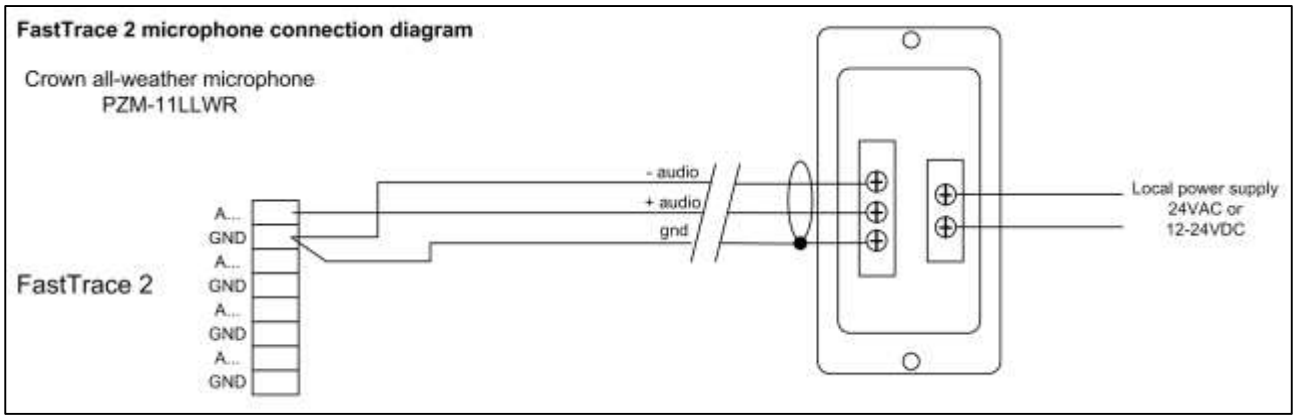
These microphones have been tested and approved.

17.1.2.1 Crown All-Weather PZM-11LLWR

Specifications

- Technology: electret condenser
- Designed for outdoor use: -10 to +60 °C
- Power supply: 12–24 VAC or DC
- Current consumption: 4 mA
- Dimensions: 11.5 x 7 x 4.4 mm

Wiring Diagram

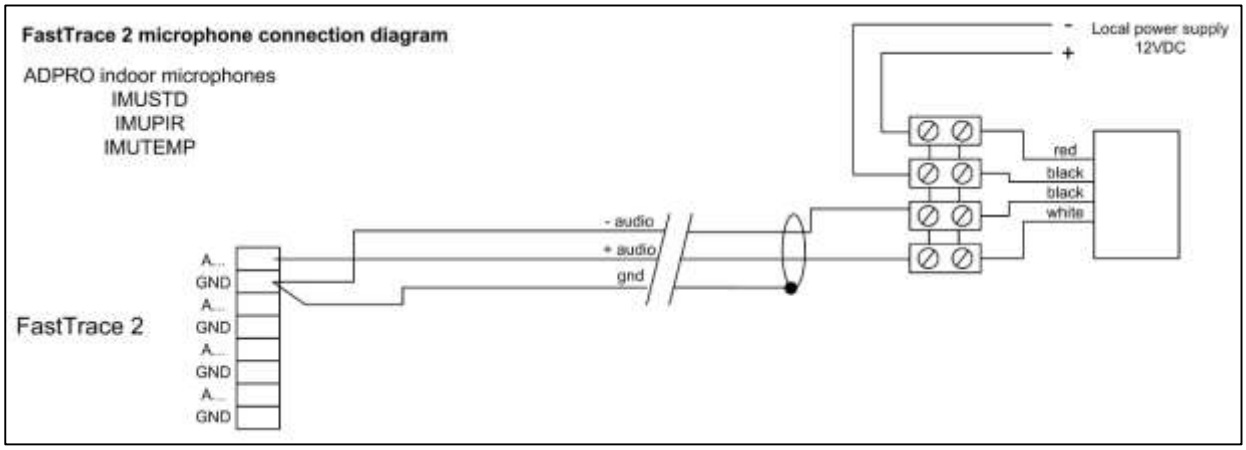


17.1.2.2 ADPRO Microphones IMUSTD, IMUPIR, IMUTEMP

Specifications

- IMUSTD = standard microphone
- IMUPIR = microphone with PIR detector appearance
- IMUTEMP = microphone with heat detector appearance
- Designed for indoor use
- Power supply: 12 VDC from regulated power supply
- Current consumption: 200–400 mA

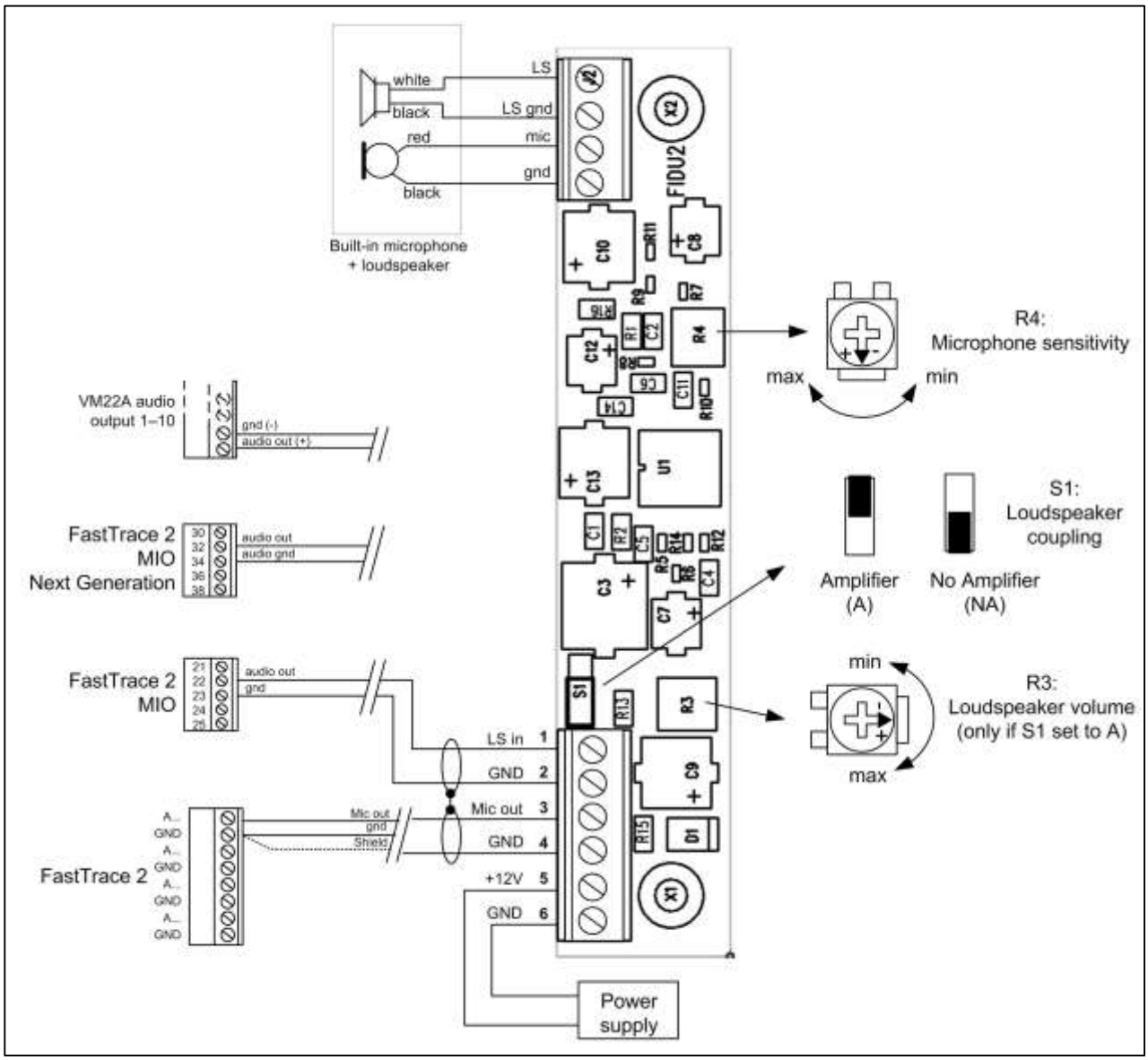
Wiring Diagram



17.1.2.3 ADPRO Audio Unit

For more information, see the *ADPRO Audio Unit Technical Datasheet*.

Wiring Diagram



17.2 Audio OUT

17.2.1 Setup

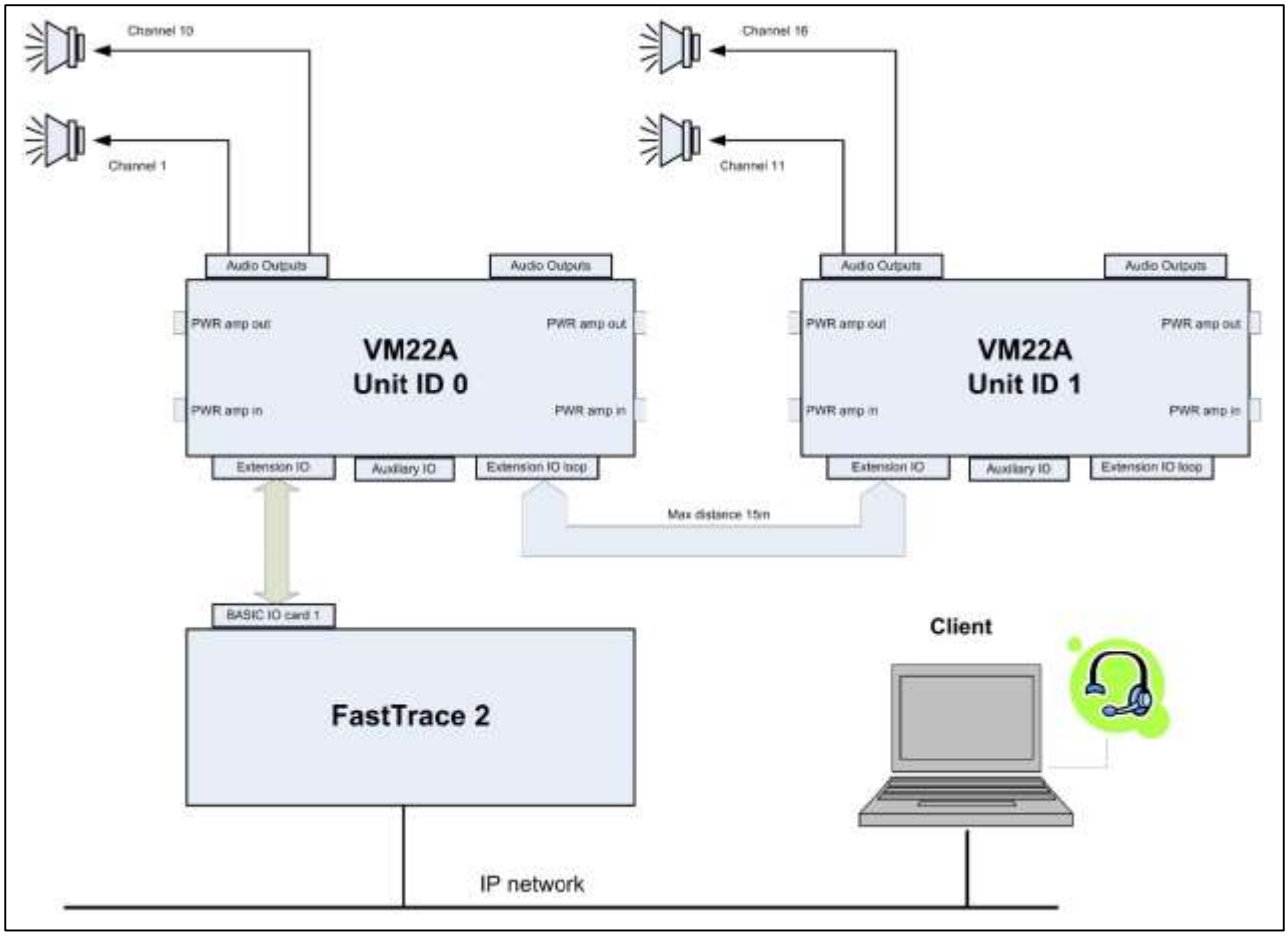
There is one general audio output available on the server: either via the MIO or via the audio out plug of the motherboard (= green 3.5 mm jack). If necessary, you can add VM22A audio units.

Audio outputs are available on one or two VM22A units, connected in cascade. Unit 0 is controlled by the MIO card, and drives loudspeakers 1 to 10. Unit 1 connects to the first unit through the EIO loop connecter and drives loudspeakers 11 to 20.

For more information, see the *VM22A Audio Switcher – Installation and User Manual*.

You can assign each loudspeaker to a camera using the XOa client software.

If only 1 loudspeaker is needed on the site, you can do without the VM22A switch. In this case, connect an amplified loudspeaker to the audio out plug of the motherboard (= green 3.5 mm jack). It is also possible to connect an amplified loudspeaker to the audio out output on the Main I/O Card.



Note

If talk-back does not work, check the following:

- Routers may block UDP packets. Use TCP or configure the router to allow UDP packets.
- Use the PC headphones plug instead of the PC microphone plug.
- The microphone on your computer is not correctly configured.

In this case you need to configure the microphone device.

In Windows XP:

1. In **Control Panel,** select **Sound and Audio Devices**.
2. Open the **Voice** tab in the **Sounds and Audio Devices Properties** dialog box.
3. Check whether the **default device** is the device you want to use.

4. Click the **Volume** button under the **Voice recording** heading.
5. Adjust the vertical volume slide on the **Mic volume** or **Line volume**, depending on which device you are using.
6. Click **OK** and close the **Control Panel**.
7. Test with **Sound Recorder**.

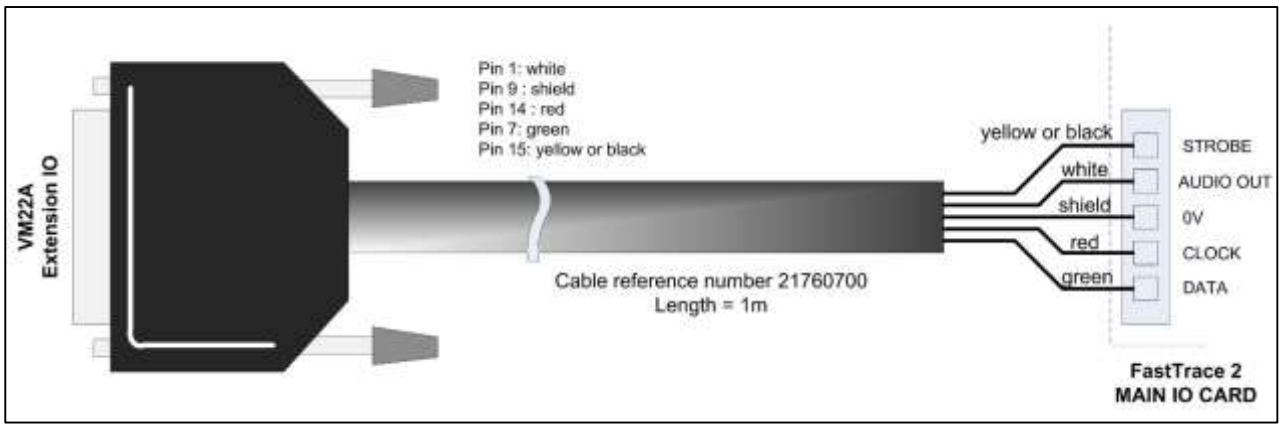
In Windows Vista / Windows 7:

1. Open Control Panel and click **Hardware and Sound**.
2. Open the **Recording** tab in the **Sound** window.
3. Right-click the microphone device you plugged in and select the **Set as default device** option.
4. To test if it works, tap the microphone with your finger a few times. In the **Sounds** window, the empty lines next to the default microphone light up in green.

17.2.2 Connecting the VM22A Audio Switch

A specific cable is used to connect the VM22A to the server.

On the back of the server, locate the MIO card. Connect the cable to the MIO as illustrated below. Respect the colour code (yellow = STROBE; white = AUDIO OUT, shield = 0V, red = CLOCK, and green = DATA).



18 Connecting PIRs

18.1 Required PIR Firmware

For a correct functioning of the PIR alarm processing, a minimal PIR firmware version 2.00 is required. Previous firmware versions also work with RS-485 communication, but do not support all features (e.g. Alarm Management).

18.2 Connecting the PIRs

To connect PIRs to the server, you have the following options:

- using an RS-485 cable and connecting the cable from the PIR to the Main I/O card of the server
- using the USB to RS-485 8 channel distribution unit
- using a USB to serial port RS-485 converter and connecting the PIR to the converter by means of an RS-485 cable

> ***Note***
>
> From firmware version 2.6 onwards, a separate PIR-HLI application license is required to configure the PIR devices.

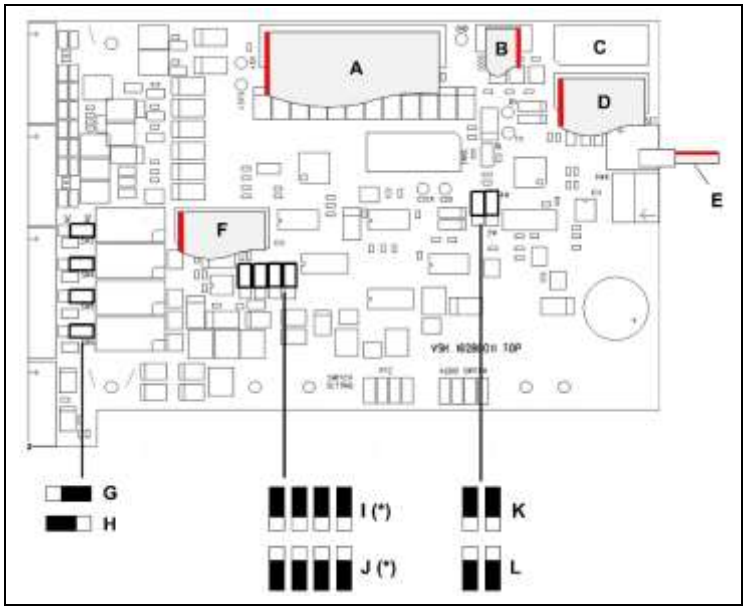
18.2.1 Connecting the PIR Detector Directly to the Main I/O Card

> ***Note***
>
> For the Next Generation Main I/O cards, see *Main I/O Cards Next Generation* on page 90.

Connect the PIR device(s) (set up multiple PIRs in cascade) to the server by connecting the RS-485 cable of the PIR closest to the server to the Main I/O card.

You must connect the PIR(s) to the appropriate terminals on the Main I/O card.

Set the jumpers on the Main I/O to PTZ output and RS-485 2-wire.

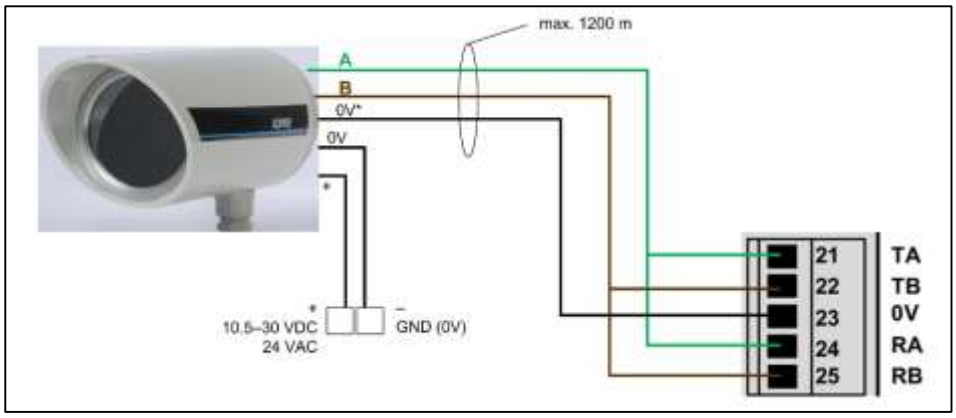


MIO card Next Generation	
I	Jumper setting: PTZ output (*)
J	Jumper setting: VM22A output (*)
K	RS-485 PTZ jumper: 4-wire setting (default setting)
L	RS-485 PTZ jumper: 2-wire setting

(*) PTZ/VM22A:
On 1st Main I/O: addressed as /dev/ttyU6.
On 2nd Main I/O: addressed as /dev/ttyU8

Also bridge the following connections:

- TA (pin 21) with RA (pin 24)
- TB (pin 22) with RB (pin 25)

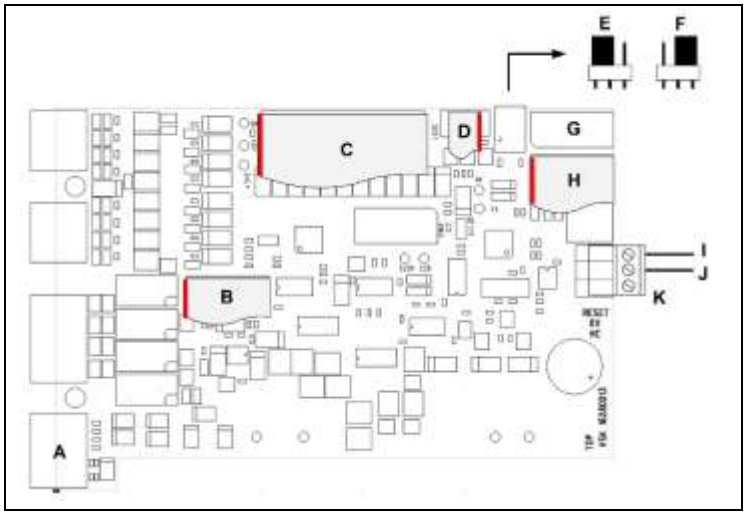


(*) Some PIR models have separate 0V terminals for data and power; on other models there is only one common 0V terminal.

The PIRs are powered locally by a power adapter.
You can place locally powered PIR detectors at the maximum distance of 1200 m for RS-485 cables, but remember that this remains a 3-line communication (RS-485 + 0V).
Make sure that there is no difference in earth potential between the server and the PIR.

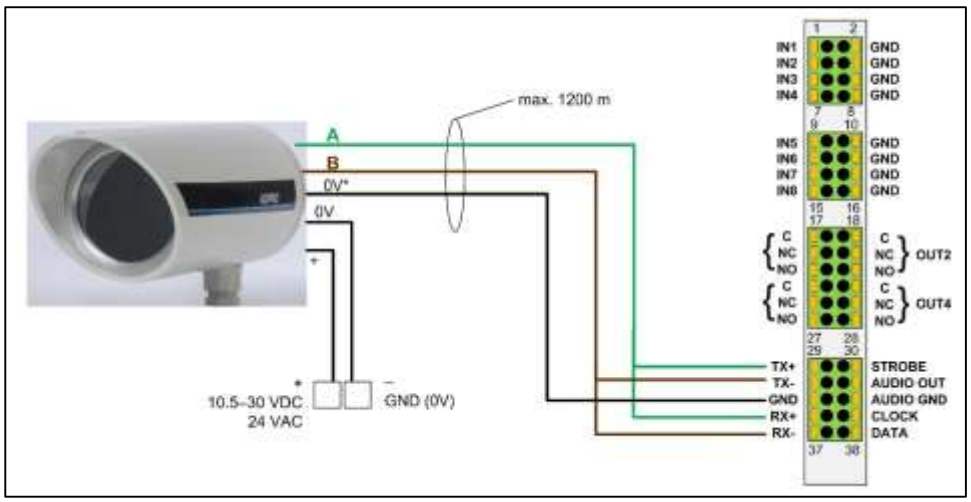
18.2.1.1 Main I/O Cards Next Generation

On the MIO card Next Generation, all connectors are available, so you do not need to adjust any jumpers to choose between PTZ and audio output. Set the RS-485 PTZ jumper to the 2-wire (PTZ) position.



MIO card Next Generation	
E	RS-485 PTZ jumper: 4-wire setting (default setting)
F	RS-485 PTZ jumper: 2-wire setting

Connect the cables as shown below.



(*) Some PIR models have separate 0V terminals for data and power; on other models there is only one common 0V terminal.

The PIRs are powered locally by a power adapter.
You can place locally powered PIR detectors at the maximum distance of 1200 m for RS-485 cables, but remember that this remains a 3-line communication (RS-485 + 0V).
Make sure that there is no difference in earth potential between the server and the PIR.

Note

If you use a 24 VAC supply for more than 1 PIR, make sure to connect all PIRs in phase.

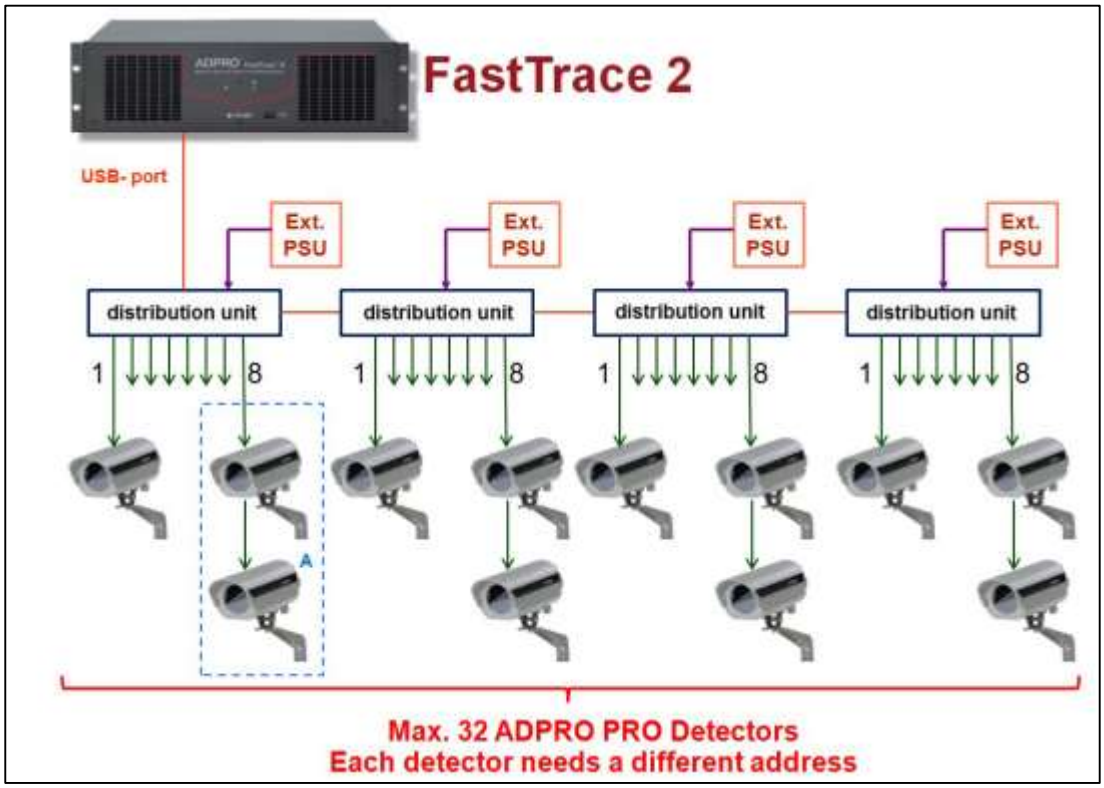
18.2.2 Connecting the PIR Detector Using the USB to RS-485 8-Channel Distribution Unit

The USB to RS-485 distribution unit provides 8 channels (1 PIR unit per channel) to easily connect and configure the PIR units to the server.

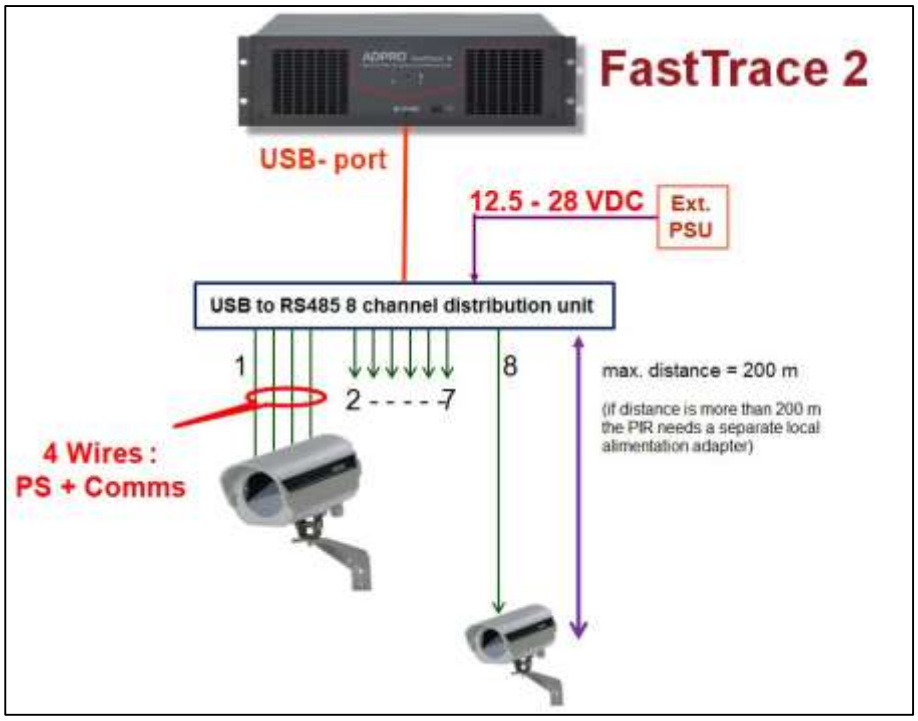
For more information, see technical datasheet 19532060 on the USB to RS-485 8-channel distribution unit.

Up to 8 PIRs can be connected through star wiring to the USB to RS-485 distribution unit. Only the 485 bidirectional communication of the PIRs is used, we do not use the mechanical PIR tampers. It is possible to connect 4 distribution units in cascade (= only one of the 4 distribution units needs to be connected to the server, but the cables between the other units shall not exceed 1 metre), so the server supports a maximum of 32 PIR devices.

The distribution unit contains a USB connection port for communication with the server. Connect it to the dev/ttyU2 USB port on the server. Do not use any other ports. Keep the USB cable between distribution unit and server as short as possible (max. 1 metre).
Restart the XOa client software after connecting the PIR to the USB port.

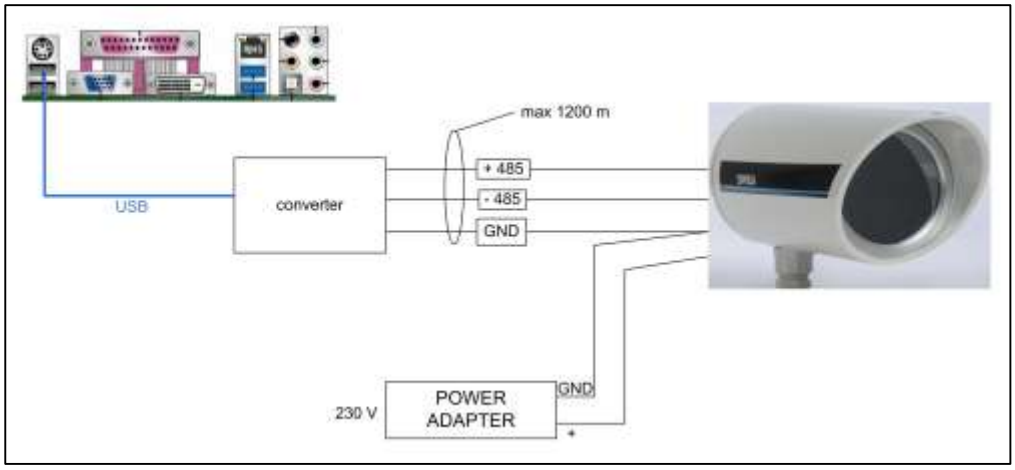


A detailed view of one connected distribution unit:


FastTrace 2
USB- port
12.5 - 28 VDC
Ext. PSU
USB to RS485 8 channel distribution unit
1
2 - - - - 7
8
max. distance = 200 m
(if distance is more than 200 m the PIR needs a separate local alimentation adapter)
4 Wires :
PS + Comms

18.2.3 Connecting the PIR Detector Using a USB to Serial Port RS-485 Converter

Connect the PIR detector to the converter and plug the USB cable of the converter in the dev/ttyU2 USB port of the server.
Restart the XOa client software after connecting the PIR to the USB port.



You can place locally powered PIR detectors at the maximum distance of 1200 m for RS-485 cables, but remember that this remains a 3-line communication (RS-485 + 0V).
Make sure that there is no difference in earth potential between the server and the PIR.

The above drawing shows you the Intel DH61BE motherboard. For the location of dev/ttyU2 USB port on the specific motherboard of your video system, see *Required Motherboard* on page 32.

You need to order the USB to serial port RS-485 converter separately (reference number 20415490).

19 Network Load

Application		Bandwidth volume
Alarm transmission		Negligible
Remote control (executing commands)		Negligible
Software update		Volume of about 170 MB
Configuration update		Volume of 150 kB
Video streaming	4CIF / 25 ips	400 kbps / camera
	4CIF / 6 ips	140 kbps / camera
	CIF / 25 ips	80 kbps / camera
	CIF / 6 ips	43 kbps / camera
	QCIF / 25 ips	17 kbps / camera
	QCIF / 6 ips	6 kbps / camera
Audio in		16 kbps / camera (with DS40xx cards) 64 kbps / camera (with DS42xx cards)
Audio out		8 kbps

Video streaming H.264, VBR, and quality set to medium.

20 Current Consumption

Estimated current consumption depends on the installed components and on the system load:

Motherboard	16 W (Intel)
Processor	25 W (AMD) Intel DG31, DG41: 65 W max. Intel DH55: 73 W max. Intel DH61: 77 W max.
4 channel A/V card	3.5 W
8 channel A/V card	7 W
Western digital RE hard disk	11 W
Western digital RE2 hard disk	12 W
Main I/O card	1 W
Extension I/O card	1 W
HIPI card (for IP cameras)	3 W
DTC card (“Down the Coax”)	0.5 W

Example (with maximum values):

Motherboard	16 W
Processor	77 W (DH61BE with Core i7 microprocessor)
Two 8-channels A/V cards	14 W
4 Western Digital RE2 hard disks	48 W
Main I/O card	1 W
Extension I/O card	1 W
TOTAL on secondary circuit on primary circuit (total current consumption divided by 0.8 – this is the efficiency of the power supply)	 157 W 196 W (0.80 A / 230 VAC)

Note

Measurement on a fully equipped (*) FastTrace 2 server (with DH61BE motherboard and G850 microprocessor) produced the following results: 0.41 A at 230 VAC → 95 W (idle state).

(*) Fully equipped = FastTrace 2 server with 2 Main I/O cards, 1 Extension I/O card, 1 HIPI card, two 8-channel A/V cards, and 4 hard disks (2 TB per disk).

21 Retrieving the IP Address

Connect a monitor/screen and keyboard to the server. If the video matrix is active, press Ctrl+Alt+F1.

The welcome screen appears:

```
                                        Video Security FastTrace 2E (XOa V3.00.003)
                                                                  Ip:      10.0.0.10
                                                            Subnet:  255.255.255.0
                                                                 Gateway: 10.0.0.1
```

The welcome screen displays the following information:

- Server model and software version
- IP address, subnet mask, and gateway.

22 Diagnostics

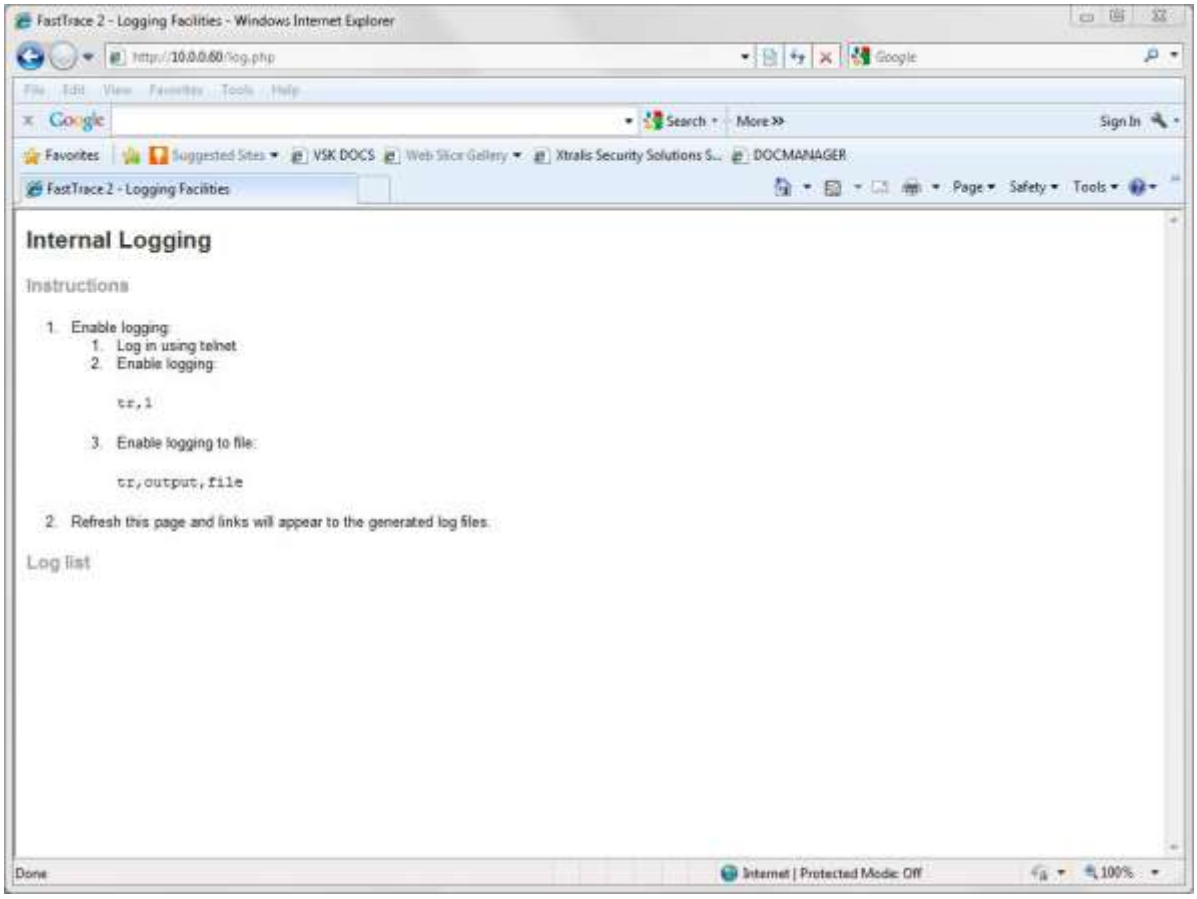
In case of major troubles with the server, the system allows to generate a number of traces. In some cases, the Xtralis Support Division may ask you to activate and capture some traces and files that can be helpful to resolve any technical issues.

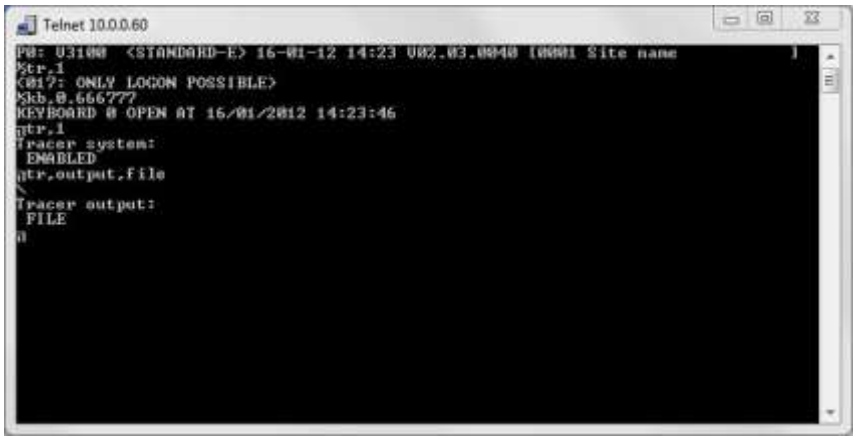
22.1 Retrieving Traces

The server can output its internal trace buffer to hard disk to allow tracing for longer periods of time without losing the data. This happens with the Telnet command **tr,output,file**. To easily retrieve these files, type the server's IP address in the address bar of your internet browser and add /log.php to the address. Example: http://10.0.0.10/log.php.

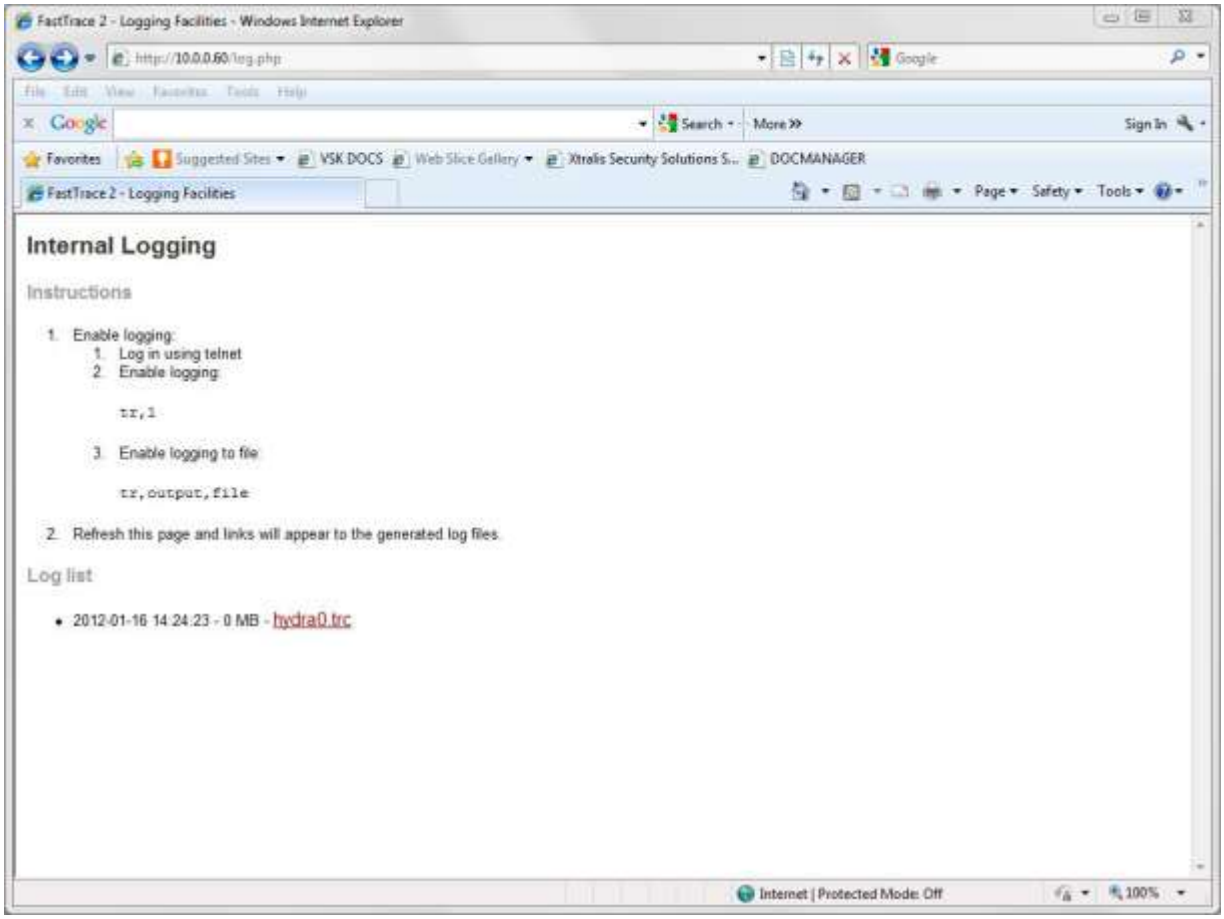
Here you can download the generated log files. You need to enable logging first.

When you open the web page without having enabled logging, the **Internal Logging** page appears. It displays the instructions to enable logging.

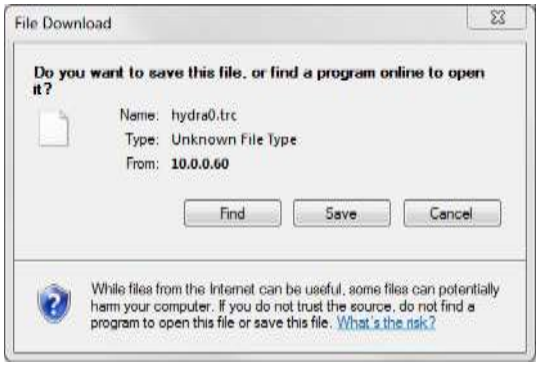

FastTrace 2 - Logging Facilities - Windows Internet Explorer
FastTrace 2 - Logging Facilities
Internal Logging
Instructions
1. Enable logging:
1. Log in using telnet
2. Enable logging:
tr,1
3. Enable logging to file:
tr,output,file
2. Refresh this page and links will appear to the generated log files.
Log list



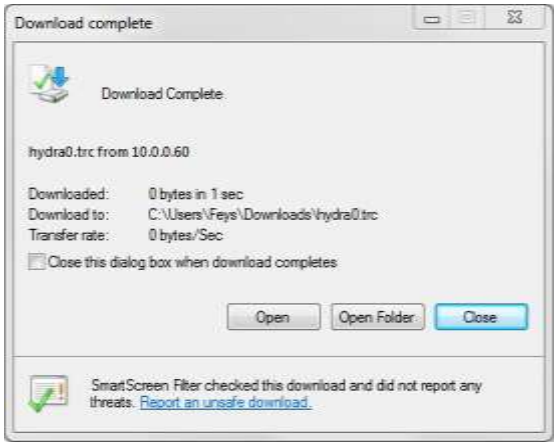
Click the link on the web page.

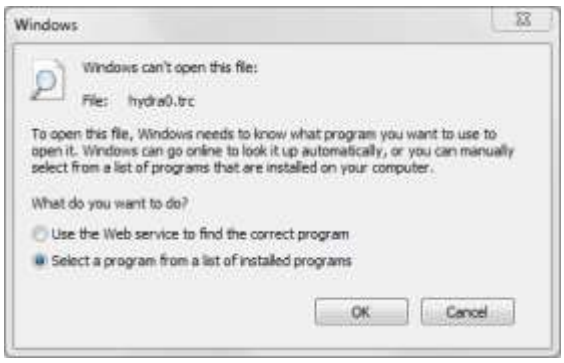

FastTrace 2 - Logging Facilities - Windows Internet Explorer
http://10.0.0.60/log.php
FastTrace 2 - Logging Facilities
Internal Logging
Instructions
1. Enable logging:
1. Log in using telnet
2. Enable logging:
tr,1
3. Enable logging to file
tr,output,file
2. Refresh this page and links will appear to the generated log files.
Log list
2012-01-16 14:24:23 - 0 MB - hydra0.trc
Internet | Protected Mode: Off

Click **Save** to store the file on your PC or a network folder. Do not try to find a program online, because this will provide unexpected websites.


File Download
Do you want to save this file, or find a program online to open it?
Name: hydra0.trc
Type: Unknown File Type
From: 10.0.0.60
Find
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not find a program to open this file or save this file. What's the risk?

Click **Open** and choose **Notepad** as the default application.

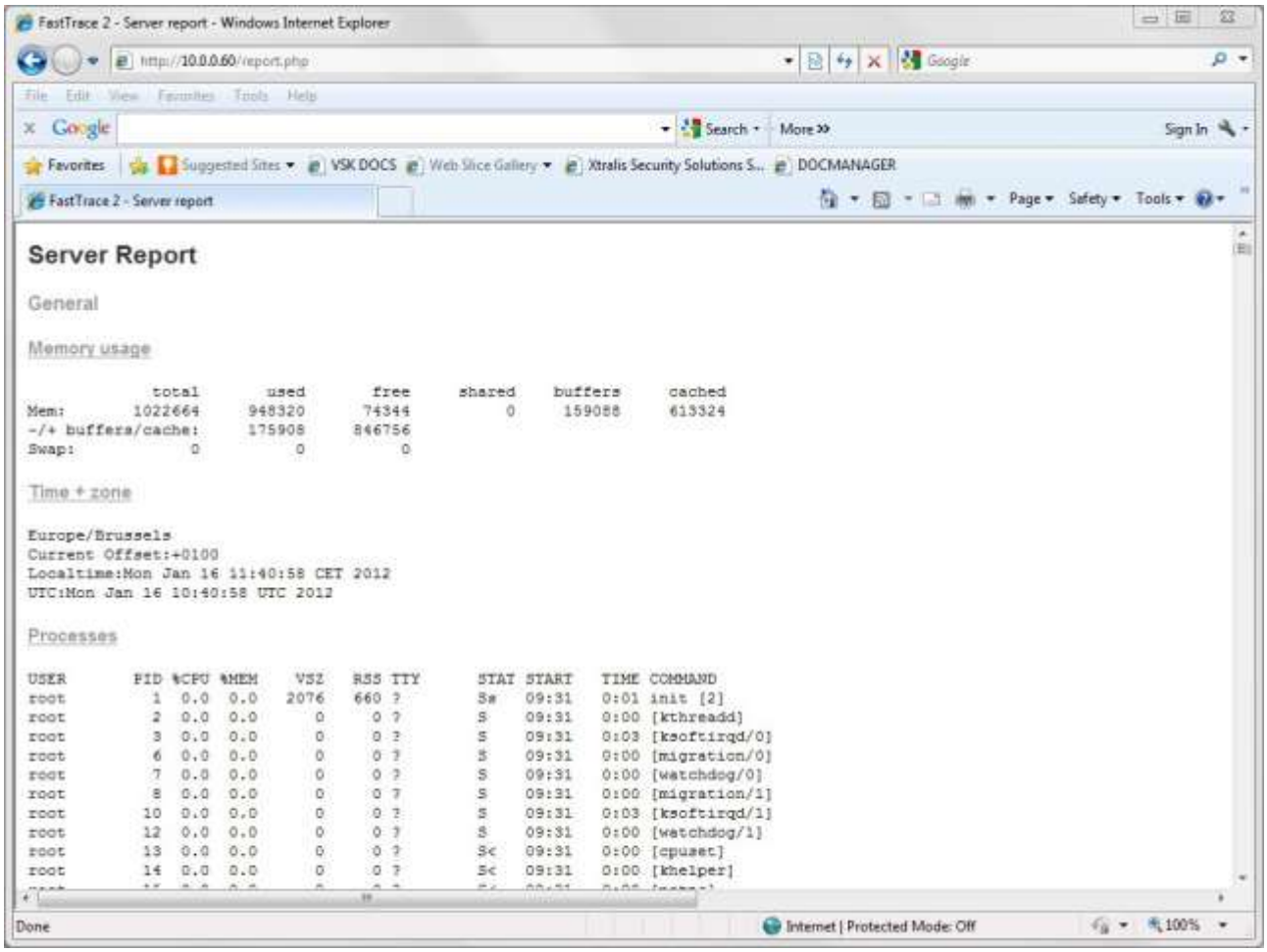

Download complete
Download Complete
hydra0.trc from 10.0.0.60
Downloaded: 0 bytes in 1 sec
Download to: C:\Users\Feys\Downloads\hydra0.trc
Transfer rate: 0 bytes/Sec
Close this dialog box when download completes
Open
Open Folder
Close
SmartScreen Filter checked this download and did not report any threats. Report an unsafe download.


Windows
Windows can't open this file:
File: hydra0.trc
To open this file, Windows needs to know what program you want to use to open it. Windows can go online to look it up automatically, or you can manually select from a list of programs that are installed on your computer.
What do you want to do?
Use the Web service to find the correct program
Select a program from a list of installed programs
OK
Cancel

22.2 Retrieving Reports

The server generates a number of reports. You can view these reports via the internet browser. Type the IP address of the server in the address bar of the browser and add /report.php to the IP address.

Example: http://10.0.0.10/report.php


FastTrace 2 - Server report - Windows Internet Explorer
http://10.0.0.60/report.php
Server Report
General
Memory usage
total used free shared buffers cached
Mem: 1022664 948320 74344 0 159088 613324
-/+ buffers/cache: 175908 846756
Swap: 0 0 0
Time + zone
Europe/Brussels
Current Offset:+0100
Localtime:Mon Jan 16 11:40:58 CET 2012
UTC:Mon Jan 16 10:40:58 UTC 2012
Processes
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND
root 1 0.0 0.0 2076 660 ? Ss 09:31 0:01 init [2]
root 2 0.0 0.0 0 0 ? S 09:31 0:00 [kthreadd]
root 3 0.0 0.0 0 0 ? S 09:31 0:03 [ksoftirqd/0]
root 6 0.0 0.0 0 0 ? S 09:31 0:00 [migration/0]
root 7 0.0 0.0 0 0 ? S 09:31 0:00 [watchdog/0]
root 8 0.0 0.0 0 0 ? S 09:31 0:00 [migration/1]
root 10 0.0 0.0 0 0 ? S 09:31 0:03 [ksoftirqd/1]
root 12 0.0 0.0 0 0 ? S 09:31 0:00 [watchdog/1]
root 13 0.0 0.0 0 0 ? S< 09:31 0:00 [cpuset]
root 14 0.0 0.0 0 0 ? S< 09:31 0:00 [khelper]
Done
Internet | Protected Mode: Off
100%

The Server Report shows the following items:

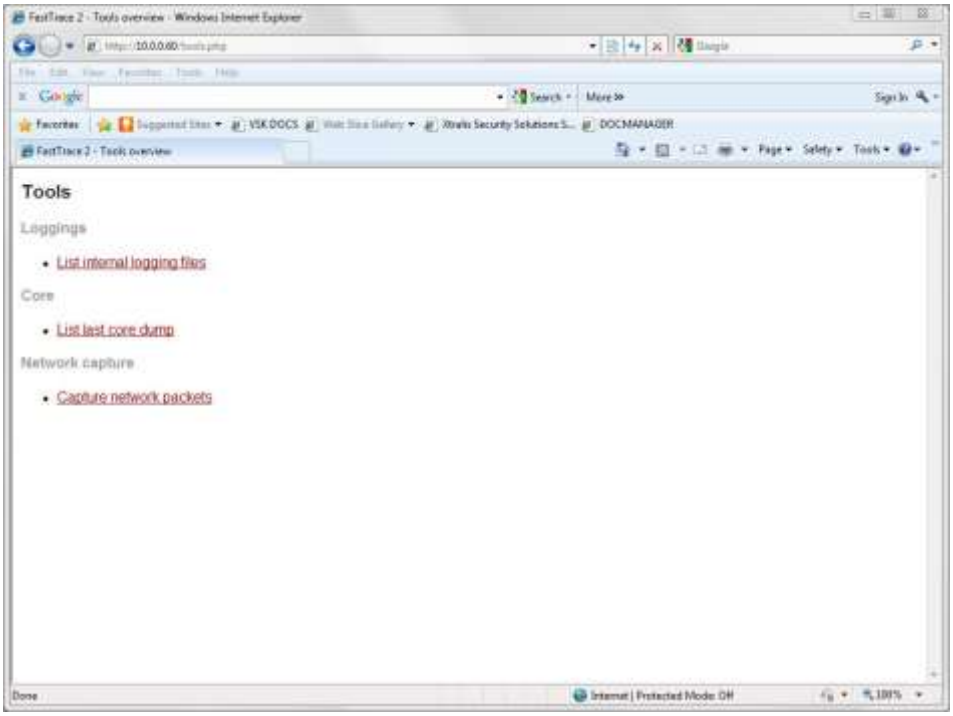
General	Memory usage
	Time + zone
	Processes
	Uptime

Performance	Vmstat
	I/O stat
	PID stat
	MP stat
Network	Interfaces – available
	Interfaces – enabled
	Routes
	Listen ports
	Netstat – all
	DEV stats
	Sockstat
	ARP cache
Filesystem	Mounts
	S.M.A.R.T
	Fsck
	Open files
	Free disk space
Hardware	CPU
	Memory
	Mainboard
	PCI
	Udev database
Server	Server version
	Server process memory usage
	Files
	Active config

Contact the Xtralis Support Division for further assistance.

23 FastTrace 2 Web Pages

There are several web pages to consult with the FastTrace 2. To open these web pages in your internet browser you need to type the IP address in the address bar, followed by the extensions as described in the table below.

Web page	Description
index.php	This is the main page of the FastTrace 2. If the client has been installed, this page automatically opens the XOa client application (see the *XOa Client Software User Manual*). If the application has not yet been installed, you will be redirected to the setup page (setup.php).
setup.php	On this page you can download the XOa client application (see the *XOa Client Software User Manual*).
tools.php	This page contains the links to the internal logging, the core dump and the network trace: 
log.php	Here you can download the log files (see *Retrieving Traces* on page 97).
report.php	Here you can consult essential information on the configuration.
core.php	Here you can download the core dump (crash info) and watch dump (hang info) when you encounter these specific problems. The Xtralis Support Division may ask you to send these files to them for further investigation. Always mention the version when providing a core dump!
phpshell.php	This is a Linux console through a web browser. You need a username and password to use this tool. This is by default only accessible for the Xtralis Development Team.
net.php	Here you find a network sniffer for network tracing. This comes in handy to check why a certain client cannot connect to the FastTrace 2 server.

24 Maintenance

24.1 Replacing the Filters

It is essential that the filters are regularly cleaned and – when needed – replaced by new filters.

You need an Allen wrench (3 mm) to remove the front plate of the FastTrace 2 server. Remove the screws indicated by the white arrows on the image below and remove the front plate. Remove the dirty filters and replace them by clean ones (or new filters). Make sure the filters are placed straight with the edges behind the chassis before putting the front plate back in place. Make sure that there is no filter material stuck between the front plate and the chassis!

Put the screws back in place. Take care that the USB slot (indicated by the red arrow) is accessible.

24.2 Cleaning the FastTrace 2 Server

Caution!

Do NOT clean the device with water or any corrosive products. Use only dust cloths and wipes to clean the outside.

25 Product Labelling

25.1 Labels

All ADPRO products are labelled.

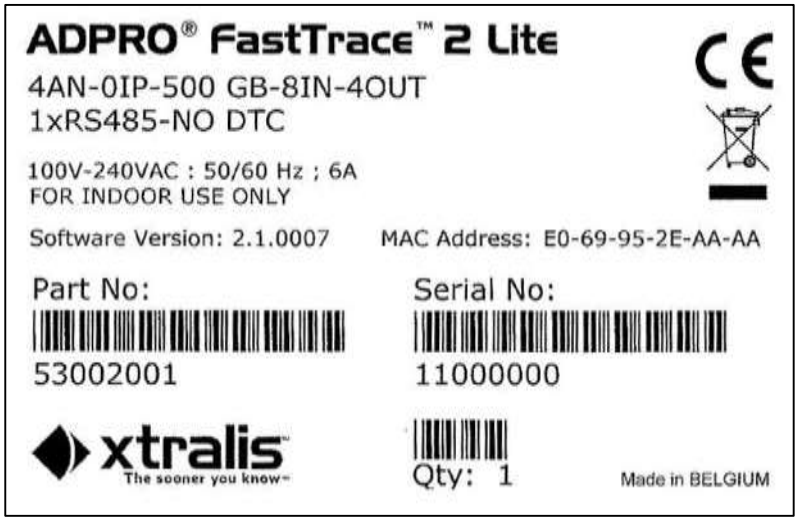
Older systems:

Device	Marking on Device	Marking on Package
FastTrace 2	XTRALIS Security Solutions BELGIUM TYPE: ADPRO FastTrace 2 ASSY number 54VHHID0 – YYMM 100–240 VAC; 50/60 Hz; 6 A FOR INDOOR USE ONLY sn. YYYY – 54VHHID0- nnnn	XTRALIS Security Solutions BELGIUM TYPE: ADPRO FastTrace 2 ASSY number 54VHHID0 – YYMM 100–240 VAC; 50/60 Hz; 6 A FOR INDOOR USE ONLY sn. YYYY – 54VHHID0- nnnn

54VHHID0 = version dependent; see *Product Number Structure* on page 104.

YY = year (2 digits)
MM = month
YYYY = year (4 digits)
nnnn = sequential number

Newest systems:



25.2 Product Number Structure

25.2.1 FastTrace 2 and FastTrace 2X Units

Each product version has an 8-digit product number, indicating the installed options.

The product number layout is made up as: 55 V HH I D 0

55	The FastTrace 2 product number
V	The video channel type: • 0 = 4 analogue • 1 = 8 analogue • 2 = 12 analogue • 3 = 16 analogue • 4 = 8 IP • 5 = 16 IP • 6 = 4 analogue and 8 IP • 7 = 8 analogue and 8 IP
HH	The hard disk size: • 00 = TX only (500 GB) • 01 = 500 GB • 02 = 1 TB • 03 = 2 TB • 04 = 3 TB • 05 = 4 TB • 06 = 5 TB • 07 = 6 TB • 08 = 7 TB • 09 = 8 TB • 10 = 9 TB
I	I/O option: • 0 = no I/O • 1 = 1 MIO • 2 = 1 MIO + 1 EIO • 3 = 2 MIO • 4 = 2 MIO + 1 EIO • 5 = 2 MIO + 2 EIO
D	Down The Coax (DTC) option: • 0 = no DTC • 1 = DTC
0	Free digit

Example:

The product number 55602200 stands for:

- 4 analogue and 8 IP cameras
- 1 TB HDD
- 1 MIO + 1 EIO
- no DTC

25.2.2 FastTrace 2E Units

Each product version has an 8-digit product number, indicating the installed options.

The product number layout is made up as: 58 VV HH I D

<table>
<tr><td>58</td><td>The FastTrace 2E product number</td></tr>
<tr><td>VV</td><td>The video channel type:
10 = 4 analogue
20 = 8 analogue
30 = 12 analogue
40 = 16 analogue
50 = 20 analogue
01 = 4 IP
02 = 8 IP
03 = 12 IP
04 = 16 IP
05 = 20 IP
11 = 4 analogue and 4 IP
12 = 4 analogue and 8 IP
13 = 4 analogue and 12 IP
14 = 4 analogue and 16 IP
21 = 8 analogue and 4 IP
22 = 8 analogue and 8 IP
23 = 8 analogue and 12 IP
31 = 12 analogue and 4 IP
21 = 12 analogue and 8 IP
41 = 16 analogue and 4 IP</td></tr>
<tr><td>HH</td><td>The hard disk size:<table><tr><th>Single disk</th><th>RAID 1 Ready</th><th>2x RAID 1 Ready</th></tr><tr><td>11 = 1x 500 GB</td><td>21 = 2x 500 GB</td><td>41 = 4x 500 GB</td></tr><tr><td>12 = 1x 1 TB</td><td>22 = 2x 1 TB</td><td>42 = 4x 1 TB</td></tr><tr><td>13 = 1x 2 TB</td><td>23 = 2x 2 TB</td><td>42 = 4x 2 TB</td></tr><tr><td>14 = not used</td><td>24 = not used</td><td>42 = not used</td></tr><tr><td>15 = 1x 4 TB</td><td>25 = 2x 4 TB</td><td>42 = 4x 4 TB</td></tr><tr><td>16 = 1x “X” TB*</td><td>26 = 2x “X” TB*</td><td>42 = 4x “X” TB*</td></tr><tr><td>…</td><td>…</td><td>…</td></tr><tr><td>19 = 1x “X” TB*</td><td>22 = 2x “X” TB*</td><td>42 = 4x “X” TB*</td></tr></table>00 = Transmission (FastTrace 2 TX) only (1 TB)
* X is to be defined in the future.</td></tr>
<tr><td>I</td><td>I/O option:
0 = no I/O
1 = 1 MIO (8 inputs, 4 outputs)
2 = 1 MIO + 1 EIO (20 inputs, 8 outputs)
3 = 2 MIO (16 inputs, 8 outputs)
4 = 2 MIO + 1 EIO (28 inputs, 12 outputs)
5 = 2 MIO + 2 EIO (40 inputs, 16 outputs)</td></tr>
<tr><td>D</td><td>Special options:
0 = no special options
1 = DTC (Down The Coax) card inserted
2 = Bundle (+ 2 IntrusionTrace licenses)
3 = Bundle (+ 2 IntrusionTrace licenses) and DTC (Down The Coax) card</td></tr>
</table>

25.3 Declaration of Conformity

Date :2011-09-13

ADPRO FastTrace2 EMC Test plan *Issue: 1.4*

Annex 7: Suppliers Declaration of Conformity (conform ISO17050)

1. Number of SDoC: SDoC_53/55VHHID0
2. Issuer's name: VSK Electronics NV, Venetiëlaan 39, 8530 Harelbeke, Belgium
3. Object of declaration: ADPRO FastTrace2
4. The object of declaration described above is in conformity with the requirements of the following documents:

   2004/108/EC EU EMC Directive (December 2004)
   EU Harmonised standard EN 61000-6-3 Generic emission standard – Residential and light industry
   EU Harmonised standard EN 50130-4: 1996 incl. A1 and A2, Alarm systems. Electromagnetic compatibility. Product family standard: Immunity requirements for components of fire, intruder and social alarm systems

   Radiocommunications Act 1992 of Australia, Radiocommunications labelling EMC notice 2008: CISPR 22:2005, class A

   FCC 47 CFR 15.109, radio frequency devices, sub part A unintentional radiators.

   A EMC Test Plan ref. EMC_ 53/55VHHID0 is available

5. Signed for and on behalf of: VSK Electronics NV
6. Date: 4 October 2011

Author,	Verified,	Approved,
Name : Emmanuel Seynaeve	Name : Ivan Hendrikx	R&D Mgr. : Gerdy Maelbrancke
Signature :	Signature :	Signature :

Warning!

The FastTrace 2 video system is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Appendix A: Abbreviations

3G: third generation

A: ampere

AGC: automatic gain control

AHCI: Advanced Host Controller Interface

APN: Access Point Name

A/V card: audio/video card

AWG: American wire gauge

BIOS: basic input output system

BNC: Bayonet Neill–Concelman

Cam: camera

CBR: constant bitrate compression

CD: compact disk

ch: channel

CIF: common intermediate format

CMS: central monitoring station

CPU: central processing unit

DCE: data circuit-terminating equipment

DCIF: double CIF

DEOL: dual end of line

/dev/ttyU1: USB input 1

DHCP: Dynamic Host Configuration Protocol

DIN: Deutsches Institut für Normung (German national organisation for standardisation)

DNS: domain name system

DP: DisplayPort

DTC: down the coax

DTE: data terminal equipment

DVD: digital video disk

DVI: Digital Visual Interface

DVI-D: digital only DVI

EIO: Extension I/O

EMS: Event Management System

ETH: Ethernet interface

fps: frames per second

ft: foot/feet

FTDI: Future Technology Devices International

FTP: file transfer protocol

GB: gigabyte

GDI: Graphics Device Interface

GHz: gigahertz

GND: ground

GUI: graphical user interface

HD: high definition

HDD: hard disk drive

HDMI: High-Definition Multimedia Interface

HPET: High Precision Event Timer

HTTP: hypertext transfer protocol

Hz: Hertz

IC: interconnection

ID: identifier

I/O: input/output

IP: internet protocol

ips: images per second

ISDN: Integrated Services for Digital Network

IT: Information Technology

Jpg: Joint Photographic Experts Group

kbps: kilobit per second

kB: kilobyte

LAN: local area network

LED: light emitting diode

mA: milliampere

MAC: Media Access Control

MB: megabyte

Mbps: megabit per second

MIC: microphone

MIO: Main I/O

mm: millimetre

NC: normally closed

NEOL: no end of line

NO: normally open

NTP: network time protocol

NTSC: National Television System Committee

OS: operating system

OSD: on screen display

OSID: Open-Area Smoke Imaging Detection

OTB: on the box / on the board

PAL: Phase Alternating Line

PC: personal computer

PCI: peripheral component interconnect

pF: picofarad

PIN: personal identification number

PIR: passive infrared

PoE: power over Ethernet

PPP: point-to-point protocol

PSTN: public switched telephone network

PTZ: pan tilt zoom

QCIF: quarter CIF

QSIF: quarter SIF

RAID: redundant array of independent disks

RH: relative humidity

RMG: remotely managed multi-service gateway (= FastTrace 2 device)

RTP: real-time transport protocol

RTSP: real-time streaming protocol

SATA: serial ATA

SDK: software development kit

SEOL: single end of line

SIF: source input format

SIM: subscriber identity module

SMART: Self-Monitoring, Analysis, and Reporting Technology

SMTP: Simple Mail Transfer Protocol

SP: Service Pack

SPK: speaker

SVGA: Super Video Graphics Array

SXGA: Super Extended Graphics Array

Sync: synchronisation

TB: terabyte

TCP: transmission control protocol

TX: transmission

UDP: user datagram protocol

USB: Universal Serial Bus

VAC: voltage alternating current

VBR: variable bitrate compression

VCP: VideoCentral Platinum

VDC: voltage direct current

VGA: Video Graphics Array

Vp-p: voltage peak-to-peak

W: watt

W x H x D: width x height x depth

YUV: colour space with separate luminance (brightness) and chrominance (colour) components.

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UK and Europe +44 1442 242 330 **D-A-CH** +49 431 23284 1 **The Americas** +1 781 740 2223
Middle East +962 6 588 5622 **Asia** +86 21 5240 0077 **Australia and New Zealand** +61 3 9936 7000

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